February 29, 2008
DIR-08-017

Mr. Nabil Al-Hadithy
City of Berkeley
Toxics Management Division
2118 Milvia Street
Berkeley, CA 94704

Dear Mr. Al-Hadithy:

We are enclosing our annual submittal of Lawrence Berkeley National Laboratory's (LBNL's) "Hazardous Materials Business Plan." Please note the following with respect to the enclosed documents:

LBNL is a federal facility owned by the Department of Energy (DOE). In certain areas of environmental regulation, Congress has directed federal facilities to comply with state and local requirements and pay reasonable service charges. In the area of hazardous materials planning and reporting, however, while DOE facilities must comply with federal Emergency Planning and Community Right-to-Know Act (EPCRA) requirements pursuant to an Executive Order, no waiver of federal sovereign immunity from state and local regulation has occurred. Despite the lack of a sovereign immunity waiver, LBNL voluntarily complies with state requirements for hazardous materials planning and reporting. The attached report provides the information required by the state regulations.

(1) Hazardous materials are reported if they meet or exceed state thresholds, aggregated by building.

(2) Radioactive materials reporting is consistent with state requirements. State requirements provide for reporting of radioactive materials that are handled in quantities for which an emergency plan would be required according to the Nuclear Regulatory Commission (NRC) or the State of California, Department of Heath Services (DHS) regulations. There are no radioactive materials at LBNL for which such an emergency plan would be required. All radioactive materials, including those in mixed waste, have been considered for this reporting category.

(3) Hazardous waste reporting also is consistent with state requirements. Waste quantities located at the Hazardous Waste Handling facility have been aggregated, and quantities exceeding the state threshold are reported. Volumes of mixed waste have been considered for this reporting category due to their hazardous waste component.

(4) Appendix A and Appendix B are the only two forms required by the California Code of Regulations, Title 19. Additional information included in the submittal is being presented voluntarily.

We trust that this information will assist your office in serving the needs of the community regarding hazardous material disclosure information.

Please feel free to contact Jack Salazar (510) 486-6571 directly should you have any questions or wish to discuss this matter further.

Sincerely,

Howard K. Hatayama
Acting Director
Environment, Health and Safety Division

HKH/JJS/jjw

Enclosures

cc: Kim Abbott, U.S. Department of Energy, Berkeley Site Office
Dan Lunsford, Berkeley Lab Emergency Management
Ron Pauer, Berkeley Lab Environmental Services Group Leader
Paul Blodgett, Berkeley Lab Health and Safety Deputy
Nancy Rothermich, Berkeley Lab Waste Management Group Leader
Gary Piermattei, Fire Prevention Program

City of Berkeley, Toxics Management Division
2118 Milvia Street, Suite 300
Berkeley, CA 94704
(510) 981-7460 FAX (510) 981-7470

For Dept Use Only – Log In/Date Stamp

Hazardous Materials Business Plan (HMBP) Certification Statement

I. IDENTIFICATION

FACILITY ID # 6 2 6 9 3 4 9 9 8 1

BUSINESS NAME (Same as Facility Name or DBA-Doing Business As) 3
E.O. Lawrence Berkeley National Laboratory

BUSINESS SITE ADDRESS 103
One Cyclotron Road

CITY 104: Berkeley | CA | ZIP CODE 105: 94720

II. CERTIFICATION STATEMENT

Check the appropriate boxes below and sign the certification statement.

☐ INITIAL SUBMITTAL: This new HMBP is being submitted for the following:
- ☐ New facility
- ☐ Change of ownership
- ☐ Change of business address

☐ ANNUAL CERTIFICATION: I have personally reviewed the HMBP currently on file with your agency, dated _____, and hereby certify, *under penalty of perjury,* that:
- The information contained in the most recent HMBP submission is complete, accurate and up to date.
- A copy of the facility's most current Business Owner/Operator Identification page is being submitted with this certification form.
- The facility has not begun handling any hazardous materials/hazardous wastes that are not currently listed on the most recently submitted Hazardous Materials Inventory forms.
- There have been no significant changes (100% increase or decrease) in the quantities of any previously reported hazardous materials/hazardous wastes as reported on the most recently submitted Hazardous Materials Inventory forms.
- The facility's annual waste amounts reported on the most recently submitted Hazardous Materials Inventory forms are accurate and expected to be the same in the next year.
- This certification is <u>not</u> being made to meet annual inventory submission requirements of EPCRA. (EPCRA requires complete annual submission of the inventory, United States Code Title 42, Section 11022).

☑ CERTIFICATION OF CHANGES/REVISIONS: This is to certify that the HMBP has been reviewed and revisions, amendments and/or additions are necessary and are being submitted with this document. The following areas of the HBMP are affected:

- ☑ Entire HMBP revision
- ☐ Business Activities page
- ☐ Business Owner/Operator Identification page
- ☐ Hazardous Materials Inventory
- ☐ Facility Site Plan/Storage Map(s)
- ☐ Emergency Response Plan/Contingency Plan
- ☐ Other (Specify): _____

I hereby certify, under penalty of perjury, that the information contained in this Hazardous Materials Business Plan is, to the best of my knowledge, true and correct. I understand that I will be required to show proof of compliance during any facility inspection conducted by City, County, State, or Federal authorities. I understand that whenever there are changes in address, ownership, business name, or operations (closure, addition of undisclosed hazardous materials or hazardous wastes, and/or contingency planning provisions), a notification of such must be made to Toxics Management Division within 30 days of the change.

SIGNATURE OF OWNER/OPERATOR OR DESIGNATED REPRESENTATIVE	DATE
	February 29, 2008
NAME OF SIGNER (print)	TITLE OF SIGNER
oward Hatayama	Director, EH&S Division

Agency Use Only

- ☐ HMBP accepted as submitted
- ☐ HMBP requires revisions – Letter sent

HMBP ACCEPTED: ___/___/___ BY: _____

SPECIAL HAZARDS REGISTRATION

Planning and Development Department
Toxics Management Division

According to BMC Title 15, the following special hazards require registration and compliance with the ordinance. For copies of the compliance requirements, please contact your inspector for a copy of the ordinance.

Facility Name:	E.O. Lawrence Berkeley National Laboratory	
Facility Address:	1 Cyclotron Road, Berkeley, CA 94720	Phone: 510-486-5512

I. Etiological Agents Disclosure:

Etiological agents can be microorganisms which cause disease. The BMC defines an etiologic agent as any of the following:

1 An infectious substance, which is any viable microorganism, or its toxin, which causes or may cause disease in humans or animals, and includes those agents listed in 42 CFR Section 72.3 or the regulations of the Department of Health and Human Services, or any other agent that causes or may cause severe, disabling or fatal disease;

2 A diagnostic specimen, which is any human or animal material including, but not limited to, excreta, secreta, blood and its components, tissue and tissue fluids, being handled for purposes of diagnosis;

3 A biological product, which is any material prepared and manufactured in accordance with the provisions of 9 CFR parts 102, 103, or 104, or 21 CFR parts 312 or 600-680; and

4 A medical waste as defined in California Health and Safety Code Section 25023.2.

If your facility stores or handles an etiological agent on site, you must report the agent name, quantity and storage location to the Toxics Management Division.

Biological materials at this site are handled in multiple buildings at either Biosafety Level 1 (e.g., standard LBNL lab) or Biosafety Level 2 containment (e.g., lab with biosafety cabinet), respectively. Biosafety Level 1 is suitable for work involving well-characterized agents not known to consistently cause disease in healthy adult humans and of minimal potential hazard to laboratory personnel or the environment. Biosafety Level 2 is suitable for work involving agents of moderate potential hazard to personnel and the environment. Common biological materials include Risk Group 1 microorganisms, established human cell cultures, attenuated (e.g., replication deficient) viral vectors, and very limited samples of human tissue. Some medical waste as defined by California Health and Safety Code 25023.2 is generated. Risk Group 2 human pathogens are used in very few Biosafety Level 2 laboratories. Several select agent bacteria are used in one Biosafety Level 2 laboratory in accordance with 42 CFR 73. No agents or materials that require Biosafety Level 3 or 4 containment are used at this site.

II. Radioactive Materials:

Any quantity of Radioactive Materials must be reported on the Hazardous Materials Inventory-Chemical Description page of the Hazardous Materials Business Plan.

Radioactive materials reporting is consistent with state requirements. State requirements provide for reporting of radioactive materials that are handled in quantities for which an emergency plan would be required according to the Nuclear Regulatory Commission (NRC) or the State of California, Department of Health Services (DHS) regulations. There are no radioactive materials at LBNL for which such an emergency plan would be required. All radioactive materials, including those in mixed waste, have been considered for this reporting category

City of Berkeley, Toxics Management Division

UNIFIED PROGRAM CONSOLIDATED FORM – FACILITY INFORMATION

BUSINESS ACTIVITIES

I. FACILITY IDENTIFICATION

FACILITY ID #	EPA ID # (Hazardous Waste Only)
6 2 6 9 3 4 9 9 8 [1]	CA 489 000 8986

BUSINESS NAME (Same as Facility Name or DBA-Doing Business As) [3]
E.O. Lawrence Berkeley National Laboratory

II. ACTIVITIES DECLARATION

NOTE: If you check YES to any part of this list, please submit the Business Owner/Operator Identification page (OES Form 2730).

Does your facility…	If Yes, please complete these pages of the UPCF….	
A. HAZARDOUS MATERIALS Have on site (for any purpose) hazardous materials at or above 55 gallons for liquids, 500 pounds for solids, or 200 cubic feet for compressed gases (include liquids in ASTs and USTs); or the applicable Federal threshold quantity for an extremely hazardous substance specified in 40 CFR Part 355, Appendix A or B; or handle radiological materials in quantities for which an emergency plan is required pursuant to 10 CFR Parts 30, 40 or 70?	☑ YES ☐ NO [4]	HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION (OES 2731)
B. UNDERGROUND STORAGE TANKS (USTs)		UST FACILITY (Formerly SWRCB Form A)
1. Own or operate underground storage tanks?	☑ YES ☐ NO [5]	UST TANK (one page per tank) (Formerly Form B)
2. Intend to upgrade existing or install new USTs?	☐ YES ☑ NO [6]	UST FACILITY UST TANK (one per tank) UST INSTALLATION - CERTIFICATE OF COMPLIANCE (one page per tank) (Formerly Form C)
3. Need to report closing a UST?	☐ YES ☑ NO [7]	UST TANK (closure portion –one page per tank)
C. ABOVE GROUND PETROLEUM STORAGE TANKS (ASTs) Own or operate ASTs above these thresholds: ---any tank capacity is greater than 1,320 gallons, or ---the total capacity for the facility is greater than 1,320 gallons?	☑ YES ☐ NO [8]	NO FORM REQUIRED TO CUPAs
D. HAZARDOUS WASTE		
1. Generate hazardous waste?	☑ YES ☐ NO [9]	EPA ID NUMBER – provide at the top of this page
2. Recycle more than 100 kg/month of excluded or exempted recyclable materials (per HSC 25143.2)?	☐ YES ☑ NO [10]	RECYCLABLE MATERIALS REPORT (one per recycler)
3. Treat hazardous waste on site?	☑ YES ☐ NO [11]	ONSITE HAZARDOUS WASTE TREATMENT – FACILITY (Formerly DTSC Forms 1772) ONSITE HAZARDOUS WASTE TREATMENT – UNIT (one page per unit) (Formerly DTSC Forms 1772 A,B,C,D and L)
4. Treatment subject to financial assurance requirements (for Permit by Rule and Conditional Authorization)?	☑ YES ☐ NO [12]	CERTIFICATION OF FINANCIAL ASSURANCE (Formerly DTSC Form 1232)
5. Consolidate hazardous waste generated at a remote site?	☐ YES ☑ NO [13]	REMOTE WASTE / CONSOLIDATION SITE ANNUAL NOTIFICATION (Formerly DTSC Form 1196)
6. Need to report the closure/removal of a tank that was classified as hazardous waste and cleaned onsite?	☐ YES ☑ NO [14]	HAZARDOUS WASTE TANK CLOSURE CERTIFICATION (Formerly DTSC Form 1249)
E. LOCAL REQUIREMENTS		
1. Use or store hazardous materials or hazardous wastes in combined (aggregate) quantities equal to or greater than 55 gallons for liquids, 500 pounds for solids or 200 cubic feet for compressed gases?	☑ YES ☐ NO [15]	HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION (OES 2731) OR SPREADSHEET
2. Use or store any quantity of etiological agents, radioactive materials or perchlorate materials?	☑ YES ☐ NO [15]	HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION (OES 2731) OR SPREADSHEET
3. Below E.1. thresholds above, but generate any quantity of hazardous waste?	☑ YES ☐ NO [15]	HAZARDOUS WASTE GENERATOR REPORTING PACKET
4. Generate any quantity of Universal Waste (mercury containing devices, non-empty aerosols, electronic devices, fluorescent tubes, batteries, mercury amalgam, etc.)?	☑ YES ☐ NO [15]	SEE THE UNIVERSAL WASTE REPORTING REQUIREMENTS PAGE FOR INSTRUCTIONS
5. Generate any quantity of photochemical waste on-site (x-ray and photo imaging processors)?	☑ YES ☐ NO [15]	IF STORED ONSITE, HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION (OES 2731) OR SPREADSHEET

City of Berkeley, Toxics Management Division

UNIFIED PROGRAM CONSOLIDATED FORM – FACILITY INFORMATION

BUSINESS OWNER/OPERATOR IDENTIFICATION

I. IDENTIFICATION

FACILITY ID#	BEGINNING DATE 100	ENDING DATE 101
62 693 4998	01/01/2007	12/31/2007

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As) 3	BUSINESS PHONE 102
E.O. Lawrence Berkeley National Laboratory	

BUSINESS SITE ADDRESS 103		
One Cyclotron Road		
CITY 104		ZIP CODE 105
Berkeley	CA	94720
DUN & BRADSTREET 106		SIC CODE (4 digit #) 107
62-693-4998		8731
COUNTY 108		
Alameda		
BUSINESS OPERATOR NAME 109		BUSINESS OPERATOR PHONE 110
		(510) 486-5514

II. BUSINESS OWNER

OWNER NAME 111	OWNER PHONE 112
US Dept. of Energy - Lawrence Berkeley National Laboratory Site Office	(510) 486-4353

OWNER MAILING ADDRESS 113		
One Cyclotron Road, Mail Stop 90R1023		
CITY 114	STATE 115	ZIP CODE 116
Berkeley	CA	94720-8123

III. ENVIRONMENTAL CONTACT

CONTACT NAME 117	CONTACT PHONE 118
Ronald Pauer	(510) 486-7614

CONTACT MAILING ADDRESS 119		
One Cyclotron Road, Mail Stop 85B0198		
CITY 120	STATE 121	ZIP CODE 122
Berkeley	CA	94720-8272

IV. EMERGENCY CONTACTS

-PRIMARY-	-SECONDARY-
NAME 123	NAME 128
Emergency Contact Team	Rocky Saunders
TITLE 124	TITLE 129
LBNL 24/7 Emergency Contact Team	Emergency Services Manager
BUSINESS PHONE 125	BUSINESS PHONE 130
Non-emergency (510) 486-4050	(510) 486-7032
24-HOUR PHONE 126	24-HOUR PHONE 131
Emergency (510) 486-6999	(510) 812-1517 cell
PAGER # 127	PAGER # 132

ADDITIONAL LOCALLY COLLECTED INFORMATION:

Certification: Based on my inquiry of those individuals responsible for obtaining the information, I certify under penalty of law that I have personally examined and am familiar with the information submitted and believe the information is true, accurate, and complete.

SIGNATURE OF OWNER/OPERATOR OR DESIGNATED REPRESENTATIVE	DATE 134	NAME OF DOCUMENT PREPARER 135
	2/29/2008	Jack Salazar
AME OF SIGNER (print) 136	TITLE OF SIGNER	137
Howard Hatayama	Director, EH&S Division	

Appendix B
Abbreviations

COLUMNS 13 & 15

EX	Explosive
FS	Flammable solid
FL	Flammable liquid
FG	Flammable gas
C	Combustible liquid
NFG	Nonflammable gas
W	Water reactive
UR	Unstable reactive
OX	Oxidizer
OXP	Organic peroxide
PYR	Pyrophoric
CYR	Cryogenic
COR	Corrosive
RAD	Radioactive
IRR	Irritant
OHH	Other health hazard
TOX	Toxic
HTOX	Highly toxic

COLUMNS 18

A	Acute health hazard
C	Chronic health hazard
F	Fire hazard
R	Reactive hazard
P	Pressure release hazard

COLUMNS 26

AGT	Above ground tank
UGT	Underground tank
ATB	Tank in building
SD	Steel drum
PD	Plastic drum
CAN	Can
CAR	Carboy
SI	Silo
FD	Fiber drum
BAG	Bag
BOX	Box
CYL	Cylinder
GB	Glass bottle
TB	Tote bin
TW	Tank wagon
RC	Rail

TEMPERATURE/PRESSURE

1	Ambient
2	High
3	Low

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	E.O. Lawrence Berkeley National Laboratory																		
2																			
3	9	8 & 30	10	11	12	13	14	17	18	19	20	21	22	23	24	25	26	27	28
4	Name	Chemical		Trade		FC	Pure		Fed	State		Largest		Max	Ave	Ann			
5	Common	Name	Cas N	Secret	EHS	Class	Mix	State	Haz Cat	Waste	days	Cont	Unit	Daily	Daily	Waste	Cont	Press	Temp
6		(components)								Code									
7																			
8																			
9	**Building 1**																		
10	CARBON DIOXIDE	Carbon Dioxide	124-38-9	N	N	OX	P	GAS	F		365	870	CFT	1740	1740		CYL	2	1
11	ARGON	Argon	7440-37-1	N	N		P	GAS	P		365	484	CFT	968	968		CYL	2	1
12	NITROGEN	Nitrogen	7727-37-9	N	N	OHH	P	GAS	P		365	690	CFT	690	690		CYL	2	1
13	NITROGEN	Nitrogen	7727-37-9	N	N	CRY	P	LIQ	P		365	1250	LBS	250	250		AGT	2	4
14																			
15	**Building 2**																		
16	ARGON	Argon	7440-37-1	N	N		P	GAS	P		365	336	CFT	5576	5576		CYL	2	1
17	CARBON DIOXIDE	Carbon Dioxide	124-38-9	N	N	OX	P	GAS	F		365	200	CFT	200	200		CYL	2	1
18	HELIUM	Helium	7440-59-7	N	N		P	GAS	P		365	2200	CFT	2391	2391		CYL	2	1
19	METHANE	Methane	74-82-8	N	N	FG	P	GAS	F		365	237	CFT	437	437		CYL	2	1
20	NITROGEN	Nitrogen	7727-37-9	N	N	CRY	P	LIQ	P		365	2200	CFT	3380	3380		AGT	2	4
21	OXYGEN	Oxygen	7782-44-7	N	N	OX	P	GAS	F		365	336	CFT	1762	1762		CYL	2	1
22	DIESEL FUEL		000169-00-0	N	N	IRR	P	LIQ	F		365	4000	GAL	4000	4000		UGT	1	1
23	DIESEL FUEL		000169-00-0	N	N	IRR	P	LIQ	F		365	1000	GAL	1000	1000		UGT	1	1
24	DIESEL FUEL		000169-00-0	N	N	IRR	P	LIQ	F		365	50	GAL	50	50		AGT	1	1
25	NITROGEN	Nitrogen	7727-37-9	N	N	CRY	P	LIQ	P		365	517	LBS	517	517		CYL	2	1
26	HYDROGEN	Hydrogen	1333-74-0	N	N	FG	P	GAS	F		365	600	CFT	700	700		CYL	2	1
27	NEON	Neon	1/9/7440	N	N		P	LIQ	P		365	200	CFT	222	222		CYL	2	1
28																			
29	**Building 5**																		
30	HELIUM	Helium	7440-59-7	N	N		P	GAS	P		365	200	CFT	200	200		CYL	2	1
31																			
32	**Building 6**																		
33	ARGON	Argon	7440-37-1	N	N		P	GAS	P		365	400	CFT	604	604		CYL	2	1
34	HELIUM	Helium	7440-59-7	N	N		P	GAS	P		365	500	CFT	1100	1100		CYL	2	1
35	NITROGEN	Nitrogen	7727-37-9	N	N	OHH	P	GAS	P		365	200	CFT	400	400		CYL	2	1
36	HYDROGEN	Hydrogen	1333-74-0	N	N	FG	P	GAS	F		365	200	CFT	202	202		CYL	2	1
37	CARBON DIOXIDE	Carbon Dioxide	124-38-9	N	N	OX	P	GAS	F		365	252	CFT	252	252		CYL	2	1
38	VINYL CHLORIDE	Vinyl Chloride	75-01-4	N	N	TOX	P	GAS	C		365	200	CFT	200	200		CYL	2	1
39																			
40	**Building 7**																		
41	DIFFUSION PUMP OIL		3390-61-2	N	N	IRR	P	LIQ	C		365	500	GAL	500	500		PB	1	1
42																			
43	**Building 10A**																		
44	DIESEL FUEL		000169-00-0	N	N	IRR	P	LIQ	F		365	55	GAL	55	55		AGT	1	1
45																			
46	**Building 31**																		
47	ZEP BIG ORANGE	D-limonene	5989-27-5	N	N	FL	M	LIQ	F		365	55	GAL	55	55		SD	1	1
48																			
49	**Building 31 (P)**																		
50	DIESEL FUEL		000169-00-0	N	N	IRR	P	LIQ	F		365	160	GAL	160	160		AGT	1	1
51	DIESEL FUEL		000169-00-0	N	N	IRR	P	LIQ	F		365	50	GAL	50	50		AGT	1	1
52	DIESEL FUEL		000169-00-0	N	N	IRR	P	LIQ	F		365	195	GAL	195	195		AGT	1	1
53																			
54	**BUILDING 37**																		

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	E.O. Lawrence Berkeley National Laboratory																		
2																			
3	9	8 & 30	10	11	12	13	14	17	18	19	20	21	22	23	24	25	26	27	28
4	Name	Chemical		Trade		FC	Pure		Fed	State		Largest		Max	Ave	Ann			
5	Common	Name	Cas N	Secret	EHS	Class	Mix	State	Haz Cat	Waste	days	Cont	Unit	Daily	Daily	Waste	Cont	Press	Temp
6		(components)								Code									
55	DIESEL FUEL		000169-00-0	N	N	IRR	P	LIQ	F		365	500	GAL	500	500		AGT	1	1
56																			
57	**BUILDING 46**																		
58	OXYGEN	Oxygen	7782-44-7	N	N	OX	P	GAS	P		365	200	CFT	200	200		CYL	2	1
59	ACETYLENE	Acetylene	74-86-2	N	N	FG	P	GAS	F		365	300	CFT	300	300		CYL	2	1
60	ARGON	Argon	7440-37-1	N	N		P	GAS	P		365	200	CFT	800	800		CYL	2	1
61	HELIUM	Helium	7440-59-7	N	N		P	GAS	P		365	200	CFT	400	400		CYL	2	1
62	NITROGEN, LIQUID	Nitrogen	7727-37-9	N	N	OHH	P	LIQ	P		365	1496	GAL	1496	1496		AGT	2	4
63																			
64	**BUILDING 48**																		
65	DIESEL FUEL		000169-00-0	N	N	IRR	P	LIQ	F		365	367	GAL	367	367		AGT	1	1
66																			
67	**Building 50 Complex**																		
68	DIESEL FUEL		000169-00-0	N	N	IRR	P	LIQ	F		365	275	GAL	275	275		AGT	1	1
69																			
70	**Building 51**																		
71	CARBON DIOXIDE	Carbon Dioxide	124-38-9	N	N	OX	P	GAS	F		365	150	CFT	900	900		CYL	2	1
72																			
73	**Building 51 (F)**																		
74	CARBON DIOXIDE	Carbon Dioxide	124-38-9	N	N	OX	P	GAS	F		365	438	CFT	438	438		CYL	2	1
75	NITROGEN	Nitrogen	7727-37-9	N	N	OHH	P	GAS	P		365	230	CFT	230	230		CYL	2	1
76																			
77	**BUILDING 51 (P)**																		
78	DIESEL FUEL		000169-00-0	N	N	IRR	P	LIQ	F		365	160	GAL	160	160		AGT	1	1
79	DIESEL FUEL		000169-00-0	N	N	IRR	P	LIQ	F		365	50	GAL	50	50		AGT	1	1
80	DIESEL FUEL		000169-00-0	N	N	IRR	P	LIQ	F		365	195	GAL	195	195		AGT	1	1
81																			
82	**Building 53**																		
83	ARGON	Argon	7440-37-1	N	N		P	GAS	P		365	219	CFT	687	687		CYL	2	1
84	NITROGEN, LIQUID	Nitrogen	7440-59-7	N	N	CRY	P	LIQ	P		365	6000	GAL	6000	6000		AGT	2	4
85	COMPRESSED GAS N.O.S.			N	N		M	GAS	P		365	219	CFT	219	219		CYL	2	1
86	NITROGEN	Nitrogen	7727-37-9	N	N	OHH	P	LIQ	P		365	42	GAL	212	212		CYL	2	1
87	HYDROGEN	Hydrogen	1333-74-0	N	N	FG	P	GAS	F		365	244	CFT	244	244		CYL	2	1
88	HELIUM	Helium	7440-59-7	N	N		P	GAS	P		365	244	CFT	244	244		CYL	2	1
89	ACETYLENE	Acetylene	74-86-2	N	N	FG	P	GAS	F		365	140	CFT	230	230		CYL	2	1
90	ETHYLENE	Ethylene	74-85-1	N	N	FG	P	GAS	F		365	244	CFT	244	244		CYL	2	1
91	OXYGEN	Oxygen	7782-44-7	N	N	OX	P	GAS	P		365	244	CFT	384	384		CYL	2	1
92	NITROGEN	Nitrogen	7727-37-9	N	N	OHH	P	GAS	P		365	244	CFT	387	387		CYL	2	1
93																			
94	**Building 55**																		
95	DIESEL FUEL		000169-00-0	N	N	IRR	P	LIQ	F		365	1000	GAL	1000	1000		UGT	1	1
96	NITROGEN, LIQUID	Nitrogen	7727-37-9	N	N	OHH	P	LIQ	P		365	1000	LBS	1000	1000		AGT	2	4
97	OXYGEN	Oxygen	7782-44-7	N	N	OX	P	GAS	P		365	50	LBS	100	100		CYL	2	1
98	METHANE	Methane	74-82-8	N	N	FG	P	GAS	F		365	50	LBS	50	50		CYL	2	1
99	ARGON	Argon	7440-37-1	N	N		P	GAS	P		365	150	LBS	200	200		CYL	2	1
100	HELIUM	Helium	7440-59-7	N	N		P	GAS	P		365	50	LBS	50	50		CYL	2	1
101	NITROGEN	Nitrogen	7727-37-9	N	N	OHH	P	GAS	P		365	1250	LBS	1300	1300		CYL	2	1
102																			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	E.O. Lawrence Berkeley National Laboratory																		
2																			
3	9	8 & 30	10	11	12	13	14	17	18	19	20	21	22	23	24	25	26	27	28
4	Name	Chemical		Trade		FC	Pure		Fed	State		Largest		Max	Ave	Ann			
5	Common	Name	Cas N	Secret	EHS	Class	Mix	State	Haz Cat	Waste	days	Cont	Unit	Daily	Daily	Waste	Cont	Press	Temp
6		(components)								Code									
103	**Building 56**																		
104	OXYGEN	Oxygen	7782-44-7	N	N	OX	P	GAS	P		365	230	CFT	298	298		CYL	2	1
105	ARGON	Argon	7440-37-1	N	N		P	GAS	P		365	250	CFT	250	250		CYL	2	1
106	HELIUM	Helium	7440-59-7	N	N		P	GAS	P		365	230	CFT	230	230		CYL	2	1
107	NITROGEN	Nitrogen	7727-37-9	N	N	OHH	P	GAS	P		365	230	CFT	230	230		CYL	2	1
108	HYDROGEN	Hydrogen	1333-74-0	N	N	FG	P	GAS	F		365	230	CFT	305	305		CYL	2	1
109	P-10 GAS	Argon (90%)	7440-37-1	N	N		P	GAS	F		365	230	CFT	230	230		CYL	2	1
110		Methane (10%)	74-82-8	N	N	FG	P	GAS	F										
111																			
112	**Building 058A**																		
113	TRANSFORMER OIL			N	N	IRR	P	LIQ	C		365	2000	GAL	2000	2000		AGT	1	1
114	OXYGEN	Oxygen	7782-44-7	N	N	OX	P	GAS	P		365	220	CFT	220	220		CYL	2	1
115	ACETYLENE	Acetylene	74-86-2	N	N	FG	P	GAS	F		365	220	CFT	880	880		CYL	2	1
116	CARBON DIOXIDE	Carbon Dioxide	124-38-9	N	N	OX	P	GAS	F		365	220	CFT	440	440		CYL	2	1
117	SULFUR HEXAFLUORIDE	Sulfur Hexafluoride	2551-62-4	N	N	OHH	P	GAS	C		365	220	CFT	440	440		CYL	2	1
118	ARGON	Argon	7440-37-1	N	N		P	GAS	P		365	220	CFT	440	440		CYL	2	1
119	HELIUM	Helium	7440-59-7	N	N		P	GAS	P		365	220	CFT	220	220		CYL	2	1
120	NITROGEN	Nitrogen	7727-37-9	N	N	OHH	P	GAS	P		365	220	CFT	440	440		CYL	2	1
121	NITROGEN, LIQUID	Nitrogen	7727-37-9	N	N	OHH	P	LIQ	P		365	1646	GAL	1646	1646		AGT	2	4
122	HELIUM, LIQUID	Helium	7440-37-1	N	N	OHH	P	LIQ	P		365	1646	GAL	1646	1646		AGT	2	4
123	CARBON DIOXIDE	Carbon Dioxide	124-38-9	N	N		P	GAS	P		365	1646	GAL	1646	1646		CYL	2	1
124	DIALA AX OIL	Naphthenic Distillate	64742-53-6	N	N	FL	MIX	LIQ	C		365	55	GAL	55	55		SD	1	1
125		Middle Distillate	265-148-2	N	N	FL													
126		2,6-Di-Tert-Butyl-P-Cres	204-881-4	N	N	FL													
127																			
128	**Building 058B**																		
129	VACUUM PUMP OIL		000826-00-0	N	N	IRR	P	LIQ	C		365	55	GAL	55	55		SD	1	1
130																			
131	**Building 62**																		
132	ARGON	Argon	7440-37-1	N	N		P	GAS	P		365	660	CFT	7405	7405		CYL	2	1
133	CARBON DIOXIDE	Carbon Dioxide	74-82-8	N	N	TOX	P	GAS	F		365	200	CFT	200	200		CYL	2	1
134	METHANE	Methane	74-82-8	N	N	FG	P	GAS	F		365	200	CFT	204	204		CYL	2	1
135	HELIUM	Helium	7440-59-7	N	N		P	GAS	P		365	220	CFT	2864	2864		CYL	2	1
136	HYDROGEN	Hydrogen	1333-74-0	N	N	FG	P	GAS	F		365	500	CFT	4389	4389		CYL	2	1
137	NITROGEN	Nitrogen	7727-37-9	N	N	OHH	P	GAS	P		365	220	CFT	2173	2173		CYL	2	1
138	OXYGEN	Oxygen	7782-44-7	N	N	OX	P	GAS	F		365	220	CFT	1248	1248		CYL	2	1
139	NITROGEN, LIQUID	Nitrogen	7727-37-9	N	N	CRY	P	LIQ	P		365	640	GAL	640	640		AGT	2	4

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	E.O. Lawrence Berkeley National Laboratory																		
2																			
3	9	8 & 30	10	11	12	13	14	17	18	19	20	21	22	23	24	25	26	27	28
4	Name	Chemical		Trade		FC	Pure		Fed	State		Largest		Max	Ave	Ann			
5	Common	Name	Cas N	Secret	EHS	Class	Mix	State	Haz Cat	Waste	days	Cont	Unit	Daily	Daily	Waste	Cont	Press	Temp
6		(components)								Code									
140																			
141	**Building 62B**																		
142	DIESEL FUEL		000169-00-0	N	N	IRR	P	LIQ	F		365	55	GAL	55	55		AGT	1	1
143																			
144	**Building 63**																		
145	METHANE	Methane	74-82-8	N	N	FG	P	GAS	F		365	200	CFT	201	201		CYL	2	1
146	FREON MIX	Freons		N	N	CRY	M	GAS	P		365	200	CFT	400	400		CYL	2	1
147	SULFUR HEXAFLUORIDE	Sulfur Hexafluoride	2551-62-4	N	N	OHH	P	GAS	C		365	748	CFT	2252	2252		CYL	2	1
148	HELIUM	Helium	7440-59-7	N	N		P	GAS	P		365	200	CFT	200	200		CYL	2	1
149	NITROGEN	Nitrogen	7727-37-9	N	N	OHH	P	GAS	P		365	200	CFT	205	205		CYL	2	1
150	CARBON DIOXIDE	Carbon Dioxide	124-38-9	N	N		P	GAS	P		365	200	CFT	400	400		CYL	2	1
151	OXYGEN	Oxygen	7782-44-7	N	N	OX	P	GAS	F		365	251	CFT	501	501		CYL	2	1
152	CARBON MONOXIDE	Carbon Monoxide	630-08-0	N	N	TOX	P	GAS	A		365	200	CFT	200	200		CYL	2	1
153	NEON / KRYPTON MIX	Neon	7440-019	N	N		MIX	GAS	P		365	200	CFT	200	200		CYL	2	1
154		Krypton	7439-90-9	N	N														
155	SULFUR HEXAFLUORIDE	Sulfur Hexafluoride	2551-62-4	N	N	OHH	P	LIQ	C		365	748	GAL	898	898		CYL	2	1
156	CARBON DIOXIDE / AIR MIX	Carbon Dioxide	124-38-9	N	N		MIX	LIQ	P		365	150	GAL	150	150		CYL	2	1
157																			
158	**Building 64**																		
159	DIESEL FUEL		000169-00-0	N	N	IRR	P	LIQ	F		365	250	GAL	250	250		AGT	1	1
160	DIESEL FUEL		000169-00-0	N	N	IRR	P	LIQ	F		365	6000	GAL	6000	6000		AGT	1	1
161	ACETYLENE	Ethyne	74-86-2	N	N	FG	P	GAS	F		365	73	LBS	73	73		CYL	2	1
162	OXYGEN	Oxygen	7782-44-7	N	N	OX	P	GAS	F		365	50	LBS	50	50		CYL	2	1
163	CARBON DIOXIDE	Carbon Dioxide	124-38-9	N	N		P	GAS	P		365	150	CFT	2502	2502		CYL	2	1
164	CARBON MONOXIDE	Carbon Monoxide	630-08-0	N	N	TOX	P	GAS	A		365	150	CFT	750	750		CYL	2	1
165	ARGON	Argon	7440-37-1	N	N		P	GAS	P		365	100	LBS	100	100		CYL	2	1
166	NITROGEN	Nitrogen	7727-37-9	N	N	OHH	P	GAS	P		365	50	LBS	50	50		CYL	2	1
167	HYDROGEN	Hydrogen	1333-74-0	N	N	FG	P	GAS	F		365	50	LBS	100	100		CYL	2	1
168																			
169	**Building 66**																		
170	ARGON	Argon	7440-37-1	N	N		P	GAS	P		365	433	CFT	1597	1597		CYL	2	1
171	METHANE	Methane	74-82-8	N	N	FG	P	GAS	F		365	222	CFT	527	527		CYL	2	1
172	COMPRESSED GAS N.O.S.			N	N		M	GAS	P		365	200	CFT	200	200		CYL	2	1
173	HELIUM	Helium	7440-59-7	N	N		P	GAS	P		365	222	CFT	4553	4553		CYL	2	1
174	HYDROGEN	Hydrogen	1333-74-0	N	N	FG	P	GAS	F		365	222	CFT	2168	2168		CYL	2	1
175	NITROGEN	Nitrogen	7727-37-9	N	N	OHH	P	GAS	P		365	240	CFT	3673	3673		CYL	2	1
176	OXYGEN	Oxygen	7782-44-7	N	N	OX	P	GAS	F		365	222	CFT	1819	1819		CYL	2	1
177	NITROGEN, LIQUID	Nitrogen	7727-37-9	N	N	OHH	P	LIQ	P		365	1496	GAL	1496	1496		AGT	2	4
178	NITROGEN, LIQUID	Nitrogen	7727-37-9	N	N	OHH	P	LIQ	P		365	63	GAL	63	63		CYL	2	4
179	DIESEL FUEL		000169-00-0	N	N	IRR	P	LIQ	F		365	450	GAL	450	450		AGT	1	1
180	ETHYLENE	Ethylene	74-85-1	N	N	FG	P	GAS	F		365	200	CFT	200	200		CYL	2	1
181	NEON	Neon	7440-019	N	N		P	LIQ	P		365	200	CFT	204	204		CYL	2	1
182	ETHANE	Ethane	74-84-0	N	N	FG	P	GAS	F		365	220	CFT	224	224		CYL	2	1
183	CARBON MONOXIDE	Carbon Monoxide	630-08-0	N	N	TOX	P	GAS	A		365	200	CFT	272	272		CYL	2	1
184																			
185	**Building 67**																		
186	OXYGEN	Oxygen	7782-44-7	N	N	OX	P	GAS	F		365	220	CFT	640	640		CYL	2	1
187	METHANE	Methane	74-82-8	N	N	FG	P	GAS	F		365	260	CFT	260	260		CYL	2	1
188	CARBON DIOXIDE	Carbon Dioxide	124-38-9	N	N		P	GAS	P		365	960	CFT	960	960		CYL	2	1

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	E.O. Lawrence Berkeley National Laboratory																		
2																			
3	9	8 & 30	10	11	12	13	14	17	18	19	20	21	22	23	24	25	26	27	28
4	Name	Chemical		Trade		FC	Pure		Fed	State		Largest		Max	Ave	Ann			
5	Common	Name	Cas N	Secret	EHS	Class	Mix	State	Haz Cat	Waste	days	Cont	Unit	Daily	Daily	Waste	Cont	Press	Temp
6		(components)								Code									
189	ARGON	Argon	7440-37-1	N	N		P	GAS	P		365	1250	CFT	3560	3560		CYL	2	1
190	HELIUM	Helium	7440-59-7	N	N		P	GAS	P		365	220	CFT	1988	1988		CYL	2	1
191	HYDROGEN	Hydrogen	1333-74-0	N	N	FG	P	GAS	F		365	230	CFT	2950	2950		CYL	2	1
192	NITROGEN	Nitrogen	7727-37-9	N	N	OHH	P	GAS	P		365	460	CFT	1540	1540		CYL	2	1
193	SULFUR HEXAFLUORIDE	Sulfur Hexafluoride	2551-62-4	N	N	OHH	P	GAS	C		365	220	CFT	220	220		CYL	2	1
194																			
195	**Building 68**																		
196	DIESEL FUEL		000169-00-0	N	N	IRR	P	LIQ	F		365	150	GAL	150	150		AGT	1	1
197																			
198	**Building 70**																		
199	ARGON	Argon	7440-37-1	N	N		P	LIQ	P		365	66	GAL	66	66		CYL	2	4
200	ARGON	Argon	7440-37-1	N	N		P	GAS	P		365	346	CFT	8008	8008		CYL	2	1
201	CARBON DIOXIDE	Carbon Dioxide	124-38-9	N	N		P	GAS	P		365	304	CFT	2871	2871		CYL	2	1
202	CARBON MONOXIDE	Carbon Monoxide	630-08-0	N	N	TOX	P	GAS	A		365	200	CFT	635	635		CYL	2	1
203	ETHANE, 1,2-DIBROMO-1,1-DIFLUORO-		75-82-1	N	N	FG	P	GAS	F		365	238	CFT	270	270		CYL	2	1
204	FREON 12		75-71-8	N	N	CRY	P	GAS	P		365	225	CFT	582	582		CYL	2	1
205	FREON MIX	Freon 12	75-71-8	N	N	CRY	M	GAS	P		365	225	CFT	400	400		CYL	2	1
206		Freon 114	76-14-2																
207	HELIUM	Helium	7440-59-7	N	N		P	GAS	P		365	244	CFT	3939	3939		CYL	2	1
208	HEXAFLUOROBENZENE	Hexafluorobenzene	392-56-3	N	N	TOX	P	GAS	C		365	225	CFT	450	450		CYL	2	1
209	METHANE	Methane	74-82-8	N	N	FG	P	GAS	F		365	230	CFT	1874	1874		CYL	2	1
210	NITROGEN	Nitrogen	7727-37-9	N	N	OHH	P	GAS	P		365	310	CFT	5353	5353		CYL	2	1
211	OXYGEN	Oxygen	7782-44-7	N	N	OX	P	GAS	F		365	247	CFT	1900	1900		CYL	2	1
212	PERFLUORO CARBON MIX			N	N	IRR	M	GAS	P		365	225	CFT	225	225		CYL	2	1
213	PERFLUORO(METHYLCYCLOHEXANE)		355-02-2	N	N	IRR	P	GAS	P		365	225	CFT	450	450		CYL	2	1
214	PERFLUORO-1,3-DIMETHYLCYCLOHEXANE		335-27-9	N	N	IRR	P	GAS	P		365	282	CFT	732	732		CYL	2	1
215	DIESEL FUEL		000169-00-0	N	N	IRR	P	LIQ	F		365	430	GAL	430	430		AGT	1	1
216	ETHYLENE	Ethylene	74-85-1	N	N	FG	P	GAS	F		365	200	CFT	400	400		CYL	2	1
217	PERFLUORODIMETHYL CYCLO BUTANE			N	N	IRR	P	GAS	P		365	200	CFT	200	200		CYL	2	1
218	NITROGEN, LIQUID	Nitrogen	7727-37-9	N	N	OHH	P	LIQ	P		365	1496	GAL	1496	1496		AGT	2	4
219	NEON	Neon		N	N		P	LIQ	P		365	1496	GAL	4488	4488		CYL	2	1
220	NEON	Neon		N	N		P	GAS	P		365	212	GAL	452	452		CYL	2	1
221	HYDROGEN	Hydrogen	1333-74-0	N	N	FG	P	GAS	F		365	250	CFT	2309	2309		CYL	2	1
222	AMMONIA	Ammonia		N	N	TOX	P	GAS	C		365	200	CFT	200	200		CYL	2	1
223	SULFUR HEXAFLUORIDE	Sulfur Hexafluoride	2551-62-4	N	N	OHH	P	LIQ	C		365	1496	GAL	1496	1496		CYL	2	1
224	PROPENE	Propene	115-07-1	N	N	FG	P	GAS	F		365	200	CFT	800	800		CYL	2	1
225	BATTERY ELECTROLYTE	Sulfuric Acid	7664-93-9	N	N	CORR	P	LIQ	C		365	2642	GAL	2642	2642		CAN	1	1
226																			
227	**Building 070A**																		
228	.5% MERCURY IN ARGON	Argon	7740-37-2	N	N	TOX	M	GAS	A		365	200	CFT	200	200		CYL	2	1
229		Mercury	7439-97-6	N	N														
230	ARGON	Argon	7740-37-2	N	N		P	GAS	P		365	600	CFT	6661	6661		CYL	2	1
231	METHANE	Methane	74-82-8	N	N	FG	P	GAS	F		365	200	CFT	200	200		CYL	2	1
232	HELIUM	Helium	7440-59-7	N	N		P	GAS	P		365	440	CFT	9405	9405		CYL	2	1
233	HYDROGEN	Hydrogen	1333-74-0	N	N	FG	P	GAS	F		365	300	CFT	3081	3081		CYL	2	1
234	HYDROGEN	Hydrogen	1333-74-0	N	N	FG	P	GAS	F		365	50	LB	50	50		CYL	2	1
235	NITROGEN	Nitrogen	7727-37-9	N	N	OHH	P	GAS	P		365	600	CFT	12036	12036		CYL	2	1
236	PELLA OIL		00034-00-0	N	N	IRR	P	LIQ	C		365	55	GAL	55	55		SD	1	1
237	DIESEL FUEL		000169-00-0	N	N	IRR	P	LIQ	F		365	983	GAL	983	983		AGT	1	1
238	DIESEL FUEL		000169-00-0	N	N	IRR	P	LIQ	F		365	50	GAL	50	50		AGT	1	1

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	E.O. Lawrence Berkeley National Laboratory																		
2																			
3	9	8 & 30	10	11	12	13	14	17	18	19	20	21	22	23	24	25	26	27	28
4	Name	Chemical		Trade		FC	Pure		Fed	State		Largest		Max	Ave	Ann			
5	Common	Name	Cas N	Secret	EHS	Class	Mix	State	Haz Cat	Waste	days	Cont	Unit	Daily	Daily	Waste	Cont	Press	Temp
6		(components)								Code									
239	GLYCOLS, POLYETHYLENE, MONO(p-(1,1,3,3-T)		9002-93-1	N	N	IRR	P	LIQ	C		365	100	GAL	100	100		SD	1	1
240	HYDROCHLORIC ACID	Hydrochloric Acid	7647-01-0	N	N	COR	P	LIQ	P		365	26	GAL	85	85		GB	1	1
241	CARBON DIOXIDE	Carbon Dioxide	124-38-9	N	N		P	GAS	F		365	230	CFT	9289	9289		CYL	2	1
242	OXYGEN	Oxygen	7782-44-7	N	N	OX	P	GAS	F		365	220	CFT	620	620		CYL	2	1
243	NITROGEN, LIQUID	Nitrogen	7727-37-9	N	N	OHH	P	LIQ	P		365	85	CFT	154	154		CYL	2	4
244	DEUTERIUM		7782-39-0	N	N	FG	P	GAS	F		365	200	CFT	200	200		CYL	2	1
245	ARGON	Argon	7740-37-2	N	N		P	LIQ	P		365	34410	CFT	34458	34458		CYL	2	4
246	HELIUM, LIQUID	Helium	7440-37-1	N	N	OHH	P	LIQ	P		365	1496	GAL	2992	2992		AGT	2	4
247	SODIUM BICARBONATE		144-55-8	N	N	IRR	P	SOL	P		365	1102	LBS	1154	1154		PB	1	1
248	2,5,8,11,14-PENTAOXAPENTADECANE		143-24-8	N	N	FL	P	LIQ	C		365	66	GAL	66	66			1	1
249	NEON	Neon	7440-019	N	N		P	LIQ	P		365	230	CFT	230	230		CYL	2	1
250																			
251	**Building 71**																		
252	METHANE	Methane	74-82-8	N	N	FG	P	GAS	F		365	200	CFT	200	200		CYL	2	1
253																			
254	**Building 71G**																		
255	HELIUM	Helium	7440-59-7	N	N		P	GAS	P		365	200	CFT	200	200		CYL	2	1
256	NITROGEN	Nitrogen	7727-37-9	N	N	OHH	P	GAS	P		365	200	CFT	200	200		CYL	2	1
257																			
258	**Building 72**																		
259	DIESEL FUEL		000169-00-0	N	N	IRR	P	LIQ	F		365	1000	GAL	1000	1000		AGT	1	1
260	ARGON	Argon	7740-37-2	N	N		P	GAS	P		365	220	CFT	433	433		CYL	2	1
261	HELIUM	Helium	7440-59-7	N	N		P	GAS	P		365	220	CFT	220	220		CYL	2	1
262	NITROGEN	Nitrogen	7727-37-9	N	N	OHH	P	GAS	P		365	426	CFT	1306	1306		CYL	2	1
263																			
264	**Building 72C**																		
265	SULFUR HEXAFLUORIDE	Sulfur Hexafluoride	2551-62-4	N	N	OHH	P	GAS	C		365	220	CFT	440	440		CYL	2	1
266	ARGON	Argon	7740-37-2	N	N		P	GAS	P		365	220	CFT	440	440		CYL	2	1
267	NITROGEN	Nitrogen	7727-37-9	N	N	OHH	P	GAS	P		365	220	CFT	1100	1100		CYL	2	1
268																			
269	**Building 74**																		
270	CARBON DIOXIDE	Carbon Dioxide	124-38-9	N	N		P	GAS	P		365	400	CFT	3904	3904		CYL	2	1
271	OXYGEN	Oxygen	7782-44-7	N	N	OX	P	GAS	P		365	50	LBS	50	50		CYL	2	1
272	NITROGEN, LIQUID	Nitrogen	7727-37-9	N	N	OHH	P	LIQ	P		365	500	LBS	1000	1000		CYL	2	4
273	ETHANOL	Ethanol	64-17-5	N	N	FL	P	LIQ	P		365	125	GAL	565	565		GB	1	1
274																			
275	**Building 76**																		
276	UNLEADED GASOLINE		8006-61-9	N	N	IR/CR	P	LIQ	F		365	10000	GAL	10000	10000		UGT	1	1
277	DIESEL FUEL		000169-00-0	N	N	IRR	P	LIQ	F		365	10000	GAL	10000	10000		UGT	1	1
278	NITROGEN	Nitrogen	7727-37-9	N	N	OHH	P	GAS	P		365	230	CFT	230	230		CYL	2	1
279	CARBON DIOXIDE	Carbon Dioxide	124-38-9	N	N		P	GAS	P		365	220	CFT	220	220		CYL	2	1
280	ARGON	Argon	7440-37-1	N	N		P	GAS	P		365	229	CFT	229	229		CYL	2	1
281	ETHANOL	Ethanol	64-17-5	N	N	FL	P	LIQ	P		365	4000	GAL	4000	4000		AGT	1	1
282	LATEX PAINTS	Latex Paints		N	N		P	LIQ			365	65	GAL	92	92		CAN	1	1
283	TRAFFIC PAINT	Oil based paint		N	N	IRR	P	LIQ	P		365	60	GAL	116	116		CAN	1	1
284																			
285	**Building 77**																		
286	DTE 24-OIL		003047-00-0	N	N	IRR	P	LIQ	C		365	55	GAL	110	110		SD	1	1
287	ZEP FORMUL * 50	Sodium Hydroxide	1310-73-2	N	N	TOX	P	LIQ	C		365	55	GAL	55	55		PD		1

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	E.O. Lawrence Berkeley National Laboratory																		
2																			
3	9	8 & 30	10	11	12	13	14	17	18	19	20	21	22	23	24	25	26	27	28
4	Name	Chemical		Trade		FC	Pure		Fed	State		Largest		Max	Ave	Ann			
5	Common	Name	Cas N	Secret	EHS	Class	Mix	State	Haz Cat	Waste	days	Cont	Unit	Daily	Daily	Waste	Cont	Press	Temp
6		(components)								Code									
288		Sodium Carbonate	497-19-8	N	N														
289		Trithanolamine	102-71-6	N	N														
290	ARGON	Argon	7440-37-1	N	N		P	GAS	P		365	4052	CFT	8109	8109		CYL	2	1
291	HYDROGEN	Hydrogen	1333-74-0	N	N	FG	P	GAS	F		365	244	CFT	244	244		CYL	2	1
292	METHANE	Methane	74-82-8	N	N	FG	M	GAS	F		365	244	CFT	244	244		CYL	2	1
293	HELIUM		7440-59-7	N	N		P	GAS	P		365	244	CFT	488	488		CYL	2	1
294	NITROGEN	Nitrogen	7727-37-9	N	N	OHH	P	GAS	P		365	244	CFT	488	488		CYL	2	1
295	NITROGEN, LIQUID	Nitrogen	7727-37-9	N	N	OHH	P	GAS	P		365	42	GAL	85	85		CYL	2	4
296	OXYGEN	Oxygen	7782-44-7	N	N	FG	P	GAS	F		365	122	CFT	244	244		CYL	2	1
297																			
298	TRIM SOL COOLANT	Petroleum Oil	8002-05-9	N	N	IRR	M	LIQ	C		365	55	GAL	228	228		SD	1	1
299		Petroleum Sulfonate	68410-99-2	N	N														
300		Chlorinated Alkane Polymer	68410-99-2	N	N														
301	VAC-2 OIL			N	N	IRR	P	LIQ	C		365	55	GAL	254	254		SD	1	1
302	DIESEL FUEL		000169-00-0	N	N	IRR	P	LIQ	IRR		365	200	GAL	200	200		AGT	1	1
303	909 CLEANER, TANK 1-7, 1-5	Sodium Metasilicate	6834-92-0	N	N	IRR TO	M	SOL	C		365	500	GAL	500	500		ATB	1	1
304	BN CLEANER, TANK 2-8	Sodium Hydroxide	1310-73-2	N	N	OX CO	M	LIQ	C		365	250	GAL	250	250		ATB	1	1
305		Nitrilotriacetic Acid	5064-31-3	N	N														
306	ALUMINUX 1000, TANK 2-6	Sodium Hydroxide	1310-73-2	N	N	IRR/TO	M	LIQ	C		365	250	GAL	250	250		ATB	1	1
307	HYDROCHLORIC ACID (15%), TAN	Hydrochloric Acid	7647-01-0	N	N	COR	P	LIQ	C		365	75	GAL	75	75		ATB	1	1
308	ELECTROPOLISH, TANK 1-2	Phosphoric Acid	7664-38-2	N	N	IRR CO	M	LIQ	C		365	250	GAL	250	250		ATB	1	1
309		Sulfuric Acid	7664-93-9	N	Y														
310	M.F. ACID, TANK 2-4	Ammonium Bifluoride	1341-49-7	N	N	IRR CO	P	LIQ	C		365	250	GAL	250	250		ATB	1	1
311	PONDAX, TANK 2-1	Sodium Bisulfate	7681-38-1	N	N	OR TO	M	SOL	C		365	250	GAL	250	250		ATB	1	1
312		Ammonium Fluorosilicate	1309-32-6	N	N														
313	BRITE DIP, TANK 3-4	Acetic Acid	64-19-7	N	N	OX IRI	M	LIQ	A		365	100	GAL	100	100		ATB	1	2
314		Chromic Acid	1333-82-0	N	N														
315		Nitric Acid	7697-37-2	N	Y														
316	BRITE DIP, TANK 3-2	Sulfuric Acid	7664-93-9	N	Y	IRR CO	M	LIQ	C		365	100	GAL	100	100		ATB	1	2
317		Nitric Acid	7697-37-2	N	Y														
318	ANODIZE TANK (15% sulfuric acid)	Sulfuric Acid	7664-93-9	N	Y	IRR CO	M	LIQ	C		365	250	GAL	250	250		ATB	1	2
319	ELECTROLESS NICKEL TANK	Nickel Sulfate	7786-81-4	N	N	OX IRI	M	LIQ	C		365	250	GAL	250	250		ATB	1	1
320		Ammonium Hydroxide	1336-21-6	N	N														
321	LACQUER THINNER		000407-00-0	N	N	FL	P	LIQ	F		365	55	GAL	55	55		SD	1	1
322	ACETONE	Acetone	67-64-1	N	N	FL	P	LIQ	C		365	42	GAL	85	85		SD	1	1
323																			
324	**Building 77J**																		
325	SODIUM METABISULFATE		7681-57-4	N	N	IRR	P	SOL	IRR		365	50	LBS	1200	600		BAG	1	1
326																			
327	**Building 77K**																		
328	BLUE GOLD EVERCLEAN			N	N	IRR/TO	M	LIQ	C		365	55	GAL	220	110		PD	1	1
329	FAST GOLD LN			N	N	IRR/TO	M	LIQ	C		365	55	GAL	220	110		PD	1	1
330	ELECTROLESS NICKEL TANK	Nickel Sulfate	7786-81-4	N	N	OX IRI	M	LIQ	C		365	55	GAL	55	55		PD	1	1
331		Ammonium Hydroxide	1336-21-6	N	N														
332																			
333	**Building 77L**																		
334	ALUMINUX 1000	Sodium Hydroxide	1310-73-2	N	N	IRR/TO	M	SOL	C		365	450	LBS	1600	800		FD	1	1
335	CAUSTIC SODA, 50%	Sodium Hydroxide	1310-73-2	N	N	COR	P	SOL	C		365	55	GAL	110	55		PD	1	1
336	SODIUM HYDROXIDE	Sodium Hydroxide	1310-73-2	N	N	COR	P	SOL	C		365	55	GAL	220	110		PD	1	1

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	E.O. Lawrence Berkeley National Laboratory																		
2																			
3	9	8 & 30	10	11	12	13	14	17	18	19	20	21	22	23	24	25	26	27	28
4	Name	Chemical		Trade		FC	Pure		Fed	State		Largest		Max	Ave	Ann			
5	Common	Name	Cas N	Secret	EHS	Class	Mix	State	Haz Cat	Waste	days	Cont	Unit	Daily	Daily	Waste	Cont	Press	Temp
6		(components)								Code									
337																			
338	**Building 77M**																		
339	MURIATIC ACID, 20 Baume	Hydrochloric Acid	7647-01-0	N	N	COR	P	LIQ	C		365	55	GAL	110	55		PD	1	1
340	IRON CHLORIDE	Iron Chloride	7705-08-0	N	N	IRR	P	LIQ	C		365	55	GAL	560	280		PD	1	1
341	MACRO BRITE L-7	Acetic Acid	64-19-77	N	N	IRR/TO	M	LIQ	C		365	55	GAL	170	85		PD	1	1
342		Chloric Acid	1333-82-0	N	N														
343		Nitric Acid	7697-37-2	N	N														
344	SULFURIC ACID	Sulfuric Acid	7664-93-9	N	Y	COR	P	LIQ	C		365	225	LBS	1350	675		CAR	1	1
345																			
346	**Building 77N**																		
347	NITRIC ACID, 42 Baume	Nitric Acid	7697-37-2	N	Y	OX TOX	P	LIQ	C		365	100	LBS	800	400		SD	1	1
348	MACRO BRITE L-7	Acetic Acid	64-19-77	N	N	IRR/TO	M	LIQ	C		365	55	GAL	275	165		PD	1	1
349		Chloric Acid	1333-82-0	N	N														
350		Nitric Acid	7697-37-2	N	N														
351																			
352	**Building 79**																		
353	KEROSENE	Kerosene	8008-20-6	N	N	FL	P	LIQ	F		365	55	GAL	55	55		SD	1	1
354	MPO-180 VACUUM PUMP OIL		000826-00-0	N	N	IRR	P	LIQ	C		365	55	GAL	55	55		SD	1	1
355	OXYGEN	Oxygen	7782-44-7	N	N	FG	P	GAS	F		365	230	CFT	520	520		CYL	2	1
356	ACETYLENE	Acetylene	74-86-2	N	N	FG	P	GAS	F		365	325	CFT	485	485		CYL	2	1
357	NITROGEN	Nitrogen	7727-37-9	N	N	OHH	P	GAS	P		365	230	CFT	260	260		CYL	2	1
358	ARGON	Argon	7440-37-1	N	N		P	GAS	P		365	230	CFT	230	230		CYL	2	1
359	CARBON DIOXIDE	Carbon Dioxide	124-38-9	N	N		P	GAS	P		365	125	CFT	250	250		CYL	2	1
360																			
361	**Building 79A**																		
362	ACETONE	Acetone	67-64-1	N	N	FL	P	LIQ	C		365	55	GAL	110	110		SD	1	1
363	ANHY. ISOPROPYL ALCOHOL	Isopropyl Alcohol	67-63-0	N	N	FL	P	LIQ	F		365	55	GAL	55	55		SD	1	1
364	DELO 400, SAE 30 WT. OIL	Motor Oil	00034-00-0	N	N	IRR	P	LIQ	C		365	55	GAL	165	165		SD	1	1
365	DTE 24-OIL		003047-00-0	N	N	IRR	P	LIQ	C		365	55	GAL	275	275		SD	1	1
366	DTE-26 OIL		000619-00-0	N	N	IRR	P	LIQ	C		365	55	GAL	275	275		SD	1	1
367	DTE LIGHT OIL			N	N	IRR	P	LIQ	C		365	55	GAL	55	55		SD	1	1
368	DTE MEDIUM			N	N	IRR	P	LIQ	C		365	55	GAL	55	55		SD	1	1
369	EDM 244 COMMONWEALTH OIL		000034-00-0	N	N	IRR	P	LIQ	C		365	55	GAL	165	165		SD	1	1
370	ISOPROPYL ALCOHOL	Isopropyl Alcohol	67-63-0	N	N	FL	P	LIQ	F		365	55	GAL	55	55		SD	1	1
371	KEROSENE	Kerosene	8008-20-6	N	N	FL	P	LIQ	F		365	55	GAL	55	55		SD	1	1
372	MPO-180 VACUUM PUMP OIL		000826-00-0	N	N	IRR	P	LIQ	C		365	55	GAL	110	110		SD	1	1
373	SHELL MORLINA OIL 220		000034-00-0	N	N	IRR	P	LIQ	C		365	55	GAL	55	55		SD	1	1
374	TURBINE OIL HEAVY		000034-00-0	N	N	IRR	P	LIQ	C		365	55	GAL	55	55		SD	1	1
375	TURBINE OIL HEAVY/MEDIUM		000034-00-0	N	N	IRR	P	LIQ	C		365	55	GAL	55	55		SD	1	1
376	VELO-6 OIL		000326-00-1	N	N	IRR	P	LIQ	C		365	55	GAL	55	55		SD	1	1
377	ZEP FORMULA-50	Sodium Hydroxide	1310-73-2	N	N	TOX	M	LIQ	C		365	55	GAL	160	160		PD	1	1
378		Sodium Carbonate	497-19-8	N	N														
379		Trithanolamine	102-71-6	N	N														
380	LACQUER THINNER		000407-00-0	N	N	FL	P	LIQ	F		365	55	GAL	55	55		SD	1	1
381																			
382	**Building 81**																		
383	SODIUM NITRITE	Sodium nitrite	7632-00-0	N	N	TOX	P	SOL	C		365	55	GAL	55	55		PD	1	1
384	BOILER INHIBITOR	Sodium nitrite	7632-00-0	N	N	TOX	P	SOL	C		365	55	GAL	110	110		PD	1	1
385		2-Mercatobenzothiazole																	

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	E.O. Lawrence Berkeley National Laboratory																		
2																			
3	9	8 & 30	10	11	12	13	14	17	18	19	20	21	22	23	24	25	26	27	28
4	Name	Chemical		Trade		FC	Pure		Fed	State		Largest		Max	Ave	Ann			
5	Common	Name	Cas N	Secret	EHS	Class	Mix	State	Haz Cat	Waste	days	Cont	Unit	Daily	Daily	Waste	Cont	Press	Temp
6		(components)								Code									
386	315 BIOCIDE	5-chloro2-methyl-4-isothiaz	26172-55-4	N	N	TOX	M	LIQ	C		365	55	GAL	165	165		PD	1	1
387	222-L-CORROSION INH.	Sodium Hydroxide	1310-73-2	N	N	TOX	M	LIQ	C		365	55	GAL	55	55		PD	1	1
388		Sodium Molybdate	7631-95-0	N	N														
389																			
390	**Building 82**																		
391	DIESEL FUEL		000169-00-0	N	N	IRR	P	LIQ	F		365	350	GAL	350	350		AGT	1	1
392																			
393	**Building 83**																		
394	DIESEL FUEL		000169-00-0	N	N	IRR	P	LIQ	F		365	4000	GAL	4000	4000		AGT	1	1
395																			
396	**Building 84**																		
397	DIESEL FUEL		000169-00-0	N	N	IRR	P	LIQ	F		365	6000	GAL	6000	6000		AGT	1	1
398	NITROGEN, LIQUID	Nitrogen	7727-37-9	N	N	OHH	P	LIQ	P		365	2500	LBS	3750	3750		AGT	2	4
399	OXYGEN	Oxygen	7782-44-7	N	N	FG	P	GAS	F		365	250	LBS	250	250		CYL	2	1
400	NITROGEN	Nitrogen	7727-37-9	N	N	OHH	P	GAS	P		365	230	CFT	3680	3680		CYL	2	1
401	ARGON	Argon	7440-37-1	N	N		P	GAS	P		365	50	LBS	50	50		CYL	2	1
402	CARBON DIOXIDE	Carbon Dioxide	124-38-9	N	N		P	GAS	P		365	2500	LBS	2750	2750		CYL	2	1
403	HELIUM		7440-59-7	N	N		P	GAS	P		365	250	LBS	250	250		CYL	2	1
404																			
405	**Building 85**																		
406	METHANE	Methane	74-82-9	N	N	FG	P	GAS	F		365	1100	CFT	1100	1100		CYL	2	1
407	DIESEL FUEL		000169-00-0	N	N	IRR	P	LIQ	F		365	2500	GAL	2500	2500		UGT	1	1
408	PHOTO FIXER	silver -<0.1%	7440-22-4	N	N	TOX	WASTE	LIQ	C	541	365	5	GAL	110	55	2000	CAR	1	1
409		Thiosulfate - 5%	1405-41-0	N	N														
410		acetic acid - 2-5%	64-19-7	N	N														
411	SLUDGES W/ METALS	copper - 0.1%	7440-50-8	N	N	TOX	WASTE	LIQ	C	491	365	30	GAL	120	120	1500	SD	1	1
412		aluminum - 0.0001%	7429-90-5	N	N														
413		nickel - 0.0001%	7440-02-0	N	N														
414		chromium - 0.0001%	7440-47-3	N	N														
415		zinc - 0.1%	7440-66-6	N	N														
416	DIESEL FUEL		000169-00-0	N	N	IRR	P	LIQ	F		365	56	GAL	56	56		AGT	1	1
417	RAGS & CLEANING DEBRIS	lead - 0.001%	7439-92-1	N	N	TOX	WASTE	SOL	C	181	365	55	GAL	400	400	3000	SD	1	1
418	WATER W/HEAVY METALS	chromium - 0.0001%	7440-47-3	N	N	TOX	WASTE	LIQ	C	132	365	55	GAL	110	110	2000	PD	1	1
419		nickel - 0.0001%	7440-02-0	N	N														
420		copper - 0.1%	7440-50-8	N	N														
421	OIL	oil - 100%	000826-00-0	N	N	C	WASTE	LIQ	F	221	365	55	GAL	350	180	3000	SD	1	1
422	MIXED SOLVENTS	acetone - 17-100%	67-64-1	N	N	FL	WASTE	LIQ	F	212	365	5	GAL	310	310	3000	CAN	1	1
423		ethyl acetate - 5%	141-78-6	N	N														
424		MEK - 1%	78-93-3	N	N														
425		methanol - 3-5%	67-56-1	N	N														
426		ethanol 1-50%	64-17-5	N	N														
427	ACIDIC SOLUTIONS	hydrochloric 0.1-2%	7674-01-0	N	N	COR	WASTE	LIQ	A	792	365	5	GAL	110	110	700	GB	1	1
428		nitric 0.1-9%	7697-37-2	N	N														
429		hydrobromic 1-2%	10035-10-6	N	N														
430		phosphoric 0-5%	7664-38-2	N	N														
431		hydrofluoric 0-5%	7664-39-3	N	N														
432	BASIC SOLUTIONS	sodium hydroxide 3-50%	1310-73-2	N	N	COR	WASTE	LIQ	A	112	365	5	GAL	110	110	1000	GB	1	1
433		potassium hydroxide 1-10%	1310-58-3	N	N														
434	WATER W/ORGANICS	chloroform >6ppm	67-66-3	N	N	TOX	WASTE	LIQ	C	551	375	55	GAL	275	275	127*	SD	1	1

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	E.O. Lawrence Berkeley National Laboratory																		
2																			
3	9	8 & 30	10	11	12	13	14	17	18	19	20	21	22	23	24	25	26	27	28
4	Name	Chemical		Trade		FC	Pure		Fed	State		Largest		Max	Ave	Ann			
5	Common	Name	Cas N	Secret	EHS	Class	Mix	State	Haz Cat	Waste	days	Cont	Unit	Daily	Daily	Waste	Cont	Press	Temp
6		(components)								Code									
435	ORGANICS W/METALS	methanol - 3-5%	67-56-1	N	N	TOX	WASTE	SOL	C	342	365	55	GAL	140	140	100**	PD	1	1
436		barium <1%	7440-39-3	N	N														
437		potassium <1%	9/7/7440	N	N														
438		vanadium <1%	7440-62-2	N	N														
439	WASTE PAINTS	Naphtha 10-25%	n/a	N	N	FL	WASTE	LIQ	F	331	365	1	GAL	30	5	400	CAN	1	1
440		MEK 0-1%	78-93-3	N	N														
441	MIXED Halogenated Solvents	tetrachloroethylene 0-50%	127-18-4	N	N	TOX	WASTE	LIQ	C	551	365	5	GAL	55	20	1000	SD	1	1
442		1,1,1-trichloroethane 0-50%	71-55-6	N	N														
443		chloroform 0-50%	67-66-3	N	N														
444		phenol 0-50%	108-95-2	N	N														
445	PYROPHORIC LIQUIDS	aluminum alkyls 0-10%		N	N	FL	WASTE	LIQ	F	331	365	0.1	GAL	4 LBS	1 LBS	10 LBS		1	1
446		lithium alkyls, 0-10%		N	N														
447		toluene 40-50%		N	N														
448		xylene, 40-50%		N	N														
449	FLAMMABLE METALS	SODIUM 0-10%		N	N	FS	WASTE	SOL	F	155	365	0.25	GAL	20 LBS	2 LBS	50 LBS		1	1
450		LITHIUM 0-10%		N	N														
451		CALCIUM 0-1%		N	N														
452		BARIUM 0-1%																	
453		OIL, 90-100%																	
454																			
455	**Building 85A**																		
456	OIL	oil - 100%	000826-00-0	N	N	C	WASTE	LIQ	F	221	365	55	GAL	350	180	3000	SD	1	1
457	MOBILFLUID 424		000034-00-0	N	N	IRR	P	LIQ	C		365	55	GAL	55	55		PD	1	1
458	FLAMMABLE LIQUIDS	acetone - 17-100%	67-64-1	N	N	FL	WASTE	LIQ	F	551	365	55	GAL	6600	400	1000		1	1
459		ethyl acetate - 5%	141-78-6																
460		MEK - 1%	78-93-3																
461		methanol - 3-5%	67-56-1																
462		ethanol 1-50%	64-17-5																
463		hexane 0-10%																	
464		diesel fuel/gasoline 0-10%																	
465																			
466																			
467	**Building 88**																		
468	1, 1, 1-TCA	1, 1, 1 Trichloroethane	71-55-6	N	N	TOX	P	LIQ	C		365	55	GAL	55	55		SD	1	1
469	CARBON DIOXIDE	Carbon Dioxide	124-38-9	N	N		P	GAS	P		365	200	CFT	400	400		CYL	2	1
470	HELIUM	Helium	7440-59-7	N	N		P	GAS	P		365	344	CFT	2296	2296		CYL	2	1
471	NITROGEN	Nitrogen	7727-37-9	N	N	OHH	P	GAS	P		365	200	CFT	1800	1800		CYL	2	1
472	NITROGEN, LIQUID	Liquid Nitrogen	7727-37-9	N	N	CRY	P	LIQ	P		365	8000	GAL	8000	8000		AGT	2	4
473	COMPRESSED GAS N.O.S.			N	N		M	GAS	P		365	204	CFT	1224	1224		CYL	2	1
474	VACUUM PUMP OIL		000826-00-0	N	N	IRR	P	LIQ	C		365	55	GAL	112	112		SD	1	1

UNDERGROUND STORAGE TANKS

- Permits
- UST Monitoring & Emergency Response Plan

City of Berkeley, Toxics Management Division

UNIFIED PROGRAM CONSOLIDATED FORM

UNDERGROUND STORAGE TANKS - FACILITY

(one page per site) Page 1 of 1

TYPE OF ACTION (Check one item only) ☐ 1. NEW SITE PERMIT ☒ 3. RENEWAL PERMIT ☐ 4. AMENDED PERMIT ☐ 5.CHANGE OF INFORMATION specify change local use only _____ ☐ 6.TEMPORARY SITE CLOSURE ☐ 7.PERMANENTLY CLOSED SITE ☐ 8. TANK REMOVED 400

I. FACILITY / SITE INFORMATION

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As) 3: Lawrence Berkeley National Laboratory

FACILITY ID# 1:

NEAREST CROSS STREET 401: Gayley

BUSINESS TYPE 403: ☐ 1. GAS STATION ☐ 3. FARM ☐ 5. COMMERCIAL ☐ 2. DISTRIBUTOR ☐ 4. PROCESSOR ☒ 6. OTHER

FACILITY OWNER TYPE 402: ☐ 1. CORPORATION ☐ 2. INDIVIDUAL ☐ 3. PARTNERSHIP ☐ 4. LOCAL GENCY/DISTRICT* ☐ 5. COUNTY AGENCY* ☒ 6. STATE AGENCY* ☒ 7. FEDERAL AGENCY*

TOTAL NUMBER OF TANKS REMAINING AT SITE 404: 6

Is facility on Indian Reservation or trustlands? 405: ☐ Yes ☒ No

*If owner of UST is a public agency: name of supervisor of division, section or office which operates the UST (This is the contact person for the tank records.) 406: Ken Fletcher (510) 486-5770

II. PROPERTY OWNER INFORMATION

PROPERTY OWNER NAME 407: Regents of the University of California

PHONE 408: David McGraw (510) 486-5551

MAILING OR STREET ADDRESS 409: One Cyclotron Road, Mail Stop 50A-4112, Attention: David McGraw

CITY 410: Berkeley

STATE 411: CA

ZIP CODE 412: 94720

PROPERTY OWNER TYPE 413: ☐ 1. CORPORATION ☐ 2. INDIVIDUAL ☐ 3. PARTNERSHIP ☐ 4. LOCAL AGENCY / DISTRICT ☐ 5. COUNTY AGENCY ☒ 6. STATE AGENCY ☐ 7. FEDERAL AGENCY

III. TANK OWNER INFORMATION

TANK OWNER NAME 414: United States Department of Energy, Berkeley Site Office

PHONE 415: Aundra Richards (510) 486-4345

MAILING OR STREET ADDRESS 416: One Cyclotron Road, Mail Stop 90-1023, Attention: Ms. Aundra Richards

CITY 417: Berkeley

STATE 418: CA

ZIP CODE 419: 94720

TANK OWNER TYPE 420: ☐ 1. CORPORATION ☐ 2. INDIVIDUAL ☐ 3. PARTNERSHIP ☐ 4. LOCAL AGENCY / DISTRICT ☐ 5. COUNTY AGENCY ☐ 6. STATE AGENCY ☒ 7. FEDERAL AGENCY

IV. BOARD OF EQUALIZATION UST STORAGE FEE ACCOUNT NUMBER

TY (TK) HQ 44- Call (916) 322-9669 if questions arise 421

V. PETROLEUM UST FINANCIAL RESPONSIBILITY

INDICATE METHOD(s) 422: ☐ 1. SELF-INSURED ☐ 2. GUARANTEE ☐ 3. INSURANCE ☐ 4. SURETY BOND ☐ 5. LETTER OF CREDIT ☒ 6. EXEMPTION ☐ 7. STATE FUND ☐ 8. STATE FUND & CFO LETTER ☐ 9. STATE FUND & CD ☐ 10. LOCAL GOVT MECHANISM ☐ 99. OTHER:_____

VI. LEGAL NOTIFICATION AND MAILING ADDRESS

Check one box to indicate which address should be used for legal notifications and mailing. Legal notifications and mailings will be sent to the tank owner unless box 1 or 2 is checked. 423: ☐ 1. FACILITY ☒ 2. PROPERTY OWNER ☐ 3. TANK OWNER

VII. APPLICANT SIGNATURE

Certification – I certify that the information provided herein is true and accurate to the best of my knowledge.

SIGNATURE OF APPLICANT: Robert Fox

DATE 424: 2/26/08

PHONE 425: Robert Fox (510) 486-7327

NAME OF APPLICANT (print) 426: Robert Fox

TITLE OF APPLICANT 427: Environment Specialist

STATE UST FACILITY NUMBER (For local use only) 428

1998 UPGRADE CERTIFICATE NUMBER (For local use only) 429

UST - Facility

Formerly SWRCB Form A.

~~Complete the UST - Facility page for all new permits, permit changes or any facility information changes. This page must be submitted within 30 days of~~ permit or facility information changes, unless approval is required before making any changes.
Submit one UST - Facility page per facility, regardless of the number of tanks located at the site. This form is completed by either the permit applicant the local agency underground tank inspector. As part of the application, the tank owner must submit a scaled facility plot plan to the local agency showing the location of the USTs with respect to buildings and landmarks [23 CCR ∋2711 (a)(8)], a description of the tank and piping leak detection monitoring program [23 CCR ∋2711 (a)(9)], and, for tanks containing petroleum, documentation showing compliance with state financial responsibility requirements [23 CCR ∋2711 (a)(11)].
Refer to 23 CCR ∋2711 for state UST information and permit application requirements.
(Note: the numbering of the instructions follows the data element numbers that are on the UPCF pages. These data element numbers are used for electronic submission and are the same as the numbering used in 27 CCR, Appendix C, the Business Section of the Unified Program Data Dictionary.)
Please number all pages of your submittal. This helps your CUPA or local agency identify whether the submittal is complete and if any pages are separated.

1. FACILITY ID NUMBER - Leave this blank. This number is assigned by the CUPA. This is the unique number which identifies your facility.
3. BUSINESS NAME - Enter the full legal name of the business.
400. TYPE OF ACTION - Check the reason the page is being completed. CHECK ONE ITEM ONLY.
401. NEAREST CROSS STREET - Enter the name of the cross street nearest to the site of the tank.
402. FACILITY OWNER TYPE - Check the type of business ownership.
403. BUSINESS TYPE - Check the type of business.
404. TOTAL NUMBER OF TANKS REMAINING AT SITE - Indicate the number of tanks remaining on the site after the requested action.
405. INDIAN OR TRUST LAND - Check whether or not the facility is located on an Indian reservation or other trust lands.
406. PUBLIC AGENCY SUPERVISOR NAME - If the facility owner is a public agency, enter the name of the supervisor for the division, section or office which operates the UST. This person must have access to the tank records.
407. PROPERTY OWNER NAME -
408. PROPERTY OWNER PHONE
409. PROPERTY OWNER MAILING OR STREET ADDRESS
410. PROPERTY OWNER CITY
411. PROPERTY OWNER STATE
412. PROPERTY OWNER ZIP CODE

Complete items 407- 412 for the property owner, unless all items are the same as the Owner Information (items 111-116) on the Business Owner/Operator Identification page (OES Form 2730). If the same, write "SAME AS SITE" in this section.

413. PROPERTY OWNER TYPE - Check the type of property ownership.
414. TANK OWNER NAME -
415. TANK OWNER PHONE
416. TANK OWNER MAILING OR STREET ADDRESS
417. TANK OWNER CITY
418. TANK OWNER STATE
419. TANK OWNER ZIP CODE

Complete items 414- 419 for the tank owner,, unless all items are the same as the Owner Information (items 111-116) on the Business Owner/Operator Identification page (OES Form 2730). If the same, write "SAME AS SITE" in this section.

420. TANK OWNER TYPE - Check the type of tank ownership.
421. BOE NUMBER - Enter your Board of Equalization (BOE) UST storage fee account number. This fee applies to regulated USTs storing petroleum products. This is required before your permit application can be processed. If you do not have an account number with the BOE or if you have any questions regarding the fee or exemptions, please call the BOE at (916) 322-9669 or write to the BOE at: Board of Equalization, Fuel Taxes Division, P.O. Box 942879, Sacramento, CA 94279-0030.
422. PETROLEUM UST FINANCIAL RESPONSIBILITY CODE - Check the method(s) used by the owner and/or operator in meeting the Federal and State financial responsibility requirements. CHECK ALL THAT APPLY. If the method is not listed, check "other≡ and enter the method(s). USTs owned by any Federal or State agency and non-petroleum USTs are exempt from this requirement.
423. LEGAL NOTIFICATION AND MAILING ADDRESS - Indicate the address to which legal notifications and mailings should be sent. The legal notifications and mailings will be sent to the tank owner unless the facility (box 1) or the property owner (box 2) is checked.
SIGNATURE OF APPLICANT - The business owner/operator of the tank facility, or officially designated representative of the owner/operator, shall sign in the space provided. This signature certifies that the signer believes that all the information submitted is accurate and complete.
424. DATE CERTIFIED - Enter the date that the page was signed.
425. APPLICANT PHONE - Enter the phone number of the applicant (person certifying).
426. APPLICANT NAME - Enter the full printed name of the person signing the page.
427. APPLICANT TITLE - Enter the title of the person signing the page.
428. STATE UST FACILITY NUMBER - Leave this blank. This number is assigned by the CUPA as follows: the number is composed of the two digit county number, the three digit jurisdiction number, and a six digit facility number. The facility number must be the same as shown in item 1.
429. 1998 UPGRADE CERTIFICATE NUMBER - Leave this blank. This number is assigned by the CUPA.

UNIFIED PROGRAM CONSOLIDATED FORM

TANKS

UNDERGROUND STORAGE TANKS – TANK PAGE 1

(Two pages per tank)

TYPE OF ACTION (Check one item only) ☐ 1. NEW PERMIT ☐ 4. AMENDED PERMIT (Specify reason) ☐ 5. CHANGE OF INFORMATION (Specify reason) ☐ 6. TEMPORARY TANK CLOSURE ☒ 3. RENEWAL PERMIT ☐ 7. PERMANENTLY CLOSED ON SITE ☐ 8. TANK REMOVED 430.

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As) 3.: Lawrence Berkeley National Laboratory

FACILITY ID: 1.

LOCATION WITHIN SITE (Optional) 431.: Building 2 - North Side

I. TANK DESCRIPTION

(A scaled plot plan with the location of the UST system including buildings and landmarks shall be submitted to the local agency.)

TANK ID # 432.	TANK MANUFACTURER 433.	COMPARTMENTALIZED TANK ☐ Yes ☒ No 434.
TK-3-2	Owens-Corning	If "Yes," complete one page for each compartment.
DATE INSTALLED (YEAR/MO) 435.: 1988/July	TANK CAPACITY IN GALLONS 436.: 1,000	NUMBER OF COMPARTMENTS 437.: N/A

ADDITIONAL DESCRIPTION (For local use only) 438.

II. TANK CONTENTS

TANK USE 439.
- ☐ 1. MOTOR VEHICLE FUEL (If checked, complete Petroleum Type)
- ☒ 2. NON-FUEL PETROLEUM
- ☐ 3. CHEMICAL PRODUCT
- ☐ 4. HAZARDOUS WASTE (Includes Used Oil)
- ☐ 95. UNKNOWN

PETROLEUM TYPE 440.
- ☐ 1a. REGULAR UNLEADED ☐ 2. LEADED ☐ 5. JET FUEL
- ☐ 1b. PREMIUM UNLEADED ☒ 3. DIESEL ☐ 6. AVIATION GAS
- ☐ 1c. MIDGRADE UNLEADED ☐ 4. GASOHOL ☐ 99. OTHER: _____

COMMON NAME (from Hazardous Materials Inventory page) 441.: Diesel #2

CAS# (from Hazardous Materials Inventory page) 442.: 68476346

III. TANK CONSTRUCTION

TYPE OF TANK (Check one item only) 443.
☐ 1. SINGLE WALL ☐ 3. SINGLE WALL WITH EXTERIOR MEMBRANE LINER ☐ 5. SINGLE WALL WITH INTERNAL BLADDER SYSTEM ☐ 95. UNKNOWN
☒ 2. DOUBLE WALL ☐ 4. SINGLE WALL IN A VAULT ☐ 99. OTHER _____

TANK MATERIAL – primary tank (Check one item only) 444.
☐ 1. BARE STEEL ☒ 3. FIBERGLASS / PLASTIC ☐ 5. CONCRETE ☐ 95. UNKNOWN
☐ 2. STAINLESS STEEL ☐ 4. STEEL CLAD W/FIBERGLASS REINFORCED PLASTIC (FRP) ☐ 8. FRP COMPATIBLE W/100% METHANOL ☐ 99. OTHER: _____

TANK MATERIAL – secondary tank (Check one item only) 445.
☐ 1. BARE STEEL ☒ 3. FIBERGLASS / PLASTIC ☐ 8. FRP COMPTIBLE W/100% METHANOL ☐ 95. UNKNOWN
☐ 2. STAINLESS STEEL ☐ 4. STEEL CLAD W/FIBERGLASS REINFORCED PLASTIC (FRP) ☐ 9. FRP NON-CORRODABLE JACKET ☐ 99. OTHER _____
☐ 5. CONCRETE ☐ 10. COATED STEEL

TANK INTERIOR LINING OR COATING (Check one item only) 446.
☐ 1. RUBBER LINED ☐ 3. EPOXY LINING ☐ 5. GLASS LINING ☐ 95. UNKNOWN
☐ 2. ALKYD LINING ☐ 4. PHENOLIC LINING ☐ 6. UNLINED ☐ 99. OTHER _____
DATE INSTALLED 447.

OTHER CORROSION PROTECTION (If Applicable) 448.
☐ 1. MANUFACTURED CATHODIC PROTECTION ☐ 3. FIBERGLASS REINFORCED PLASTIC ☐ 95. UNKNOWN
☐ 2. SACRIFICIAL ANODE ☐ 4. IMPRESSED CURRENT ☐ 99. OTHER _____
DATE INSTALLED 449.

SPILL AND OVERFILL (Check all that apply) 450.
☒ 1. SPILL CONTAINMENT 1988
☒ 2. DROP TUBE 1988
☒ 3. STRIKER PLATE 1988

TYPE 451.: _____ _____ _____

OVERFILL PROTECTION EQUIPMENT: YEAR INSTALLED 452.
☒ 1. ALARM Feb '03 ☒ 3. FILL TUBE SHUT OFF VALVE 1988
☐ 2. BALL FLOAT ____ ☐ 4. EXEMPT

IV. TANK LEAK DETECTION

(A description of the monitoring program shall be submitted to the local agency.)

IF SINGLE WALL TANK (Check all that apply) 453.
- ☐ 1. VISUAL (EXPOSED PORTION ONLY)
- ☐ 2. AUTOMATIC TANK GAUGING (ATG)
- ☐ 3. CONTINUOUS ATG
- ☐ 4. STATISTICAL INVENTORY RECONCILIATION (SIR) + BIENNIAL TANK TESTING
- ☐ 5. MANUAL TANK GAUGING (MTG)
- ☐ 6. VADOSE ZONE
- ☐ 7. GROUNDWATER
- ☐ 8. TANK TESTING
- ☐ 99. OTHER _____

IF DOUBLE WALL TANK OR TANK WITH BLADDER (Check one item only) 454.
- ☐ 1. VISUAL (SINGLE WALL IN VAULT ONLY)
- ☒ 2. CONTINUOUS INTERSTITIAL MONITORING
- ☐ 3. MANUAL MONITORING

V. TANK CLOSURE INFORMATION / PERMANENT CLOSURE IN PLACE

ESTIMATED DATE LAST USED (YR/MO/DAY) 455.	ESTIMATED QUANTITY OF SUBSTANCE REMAINING 456.	TANK FILLED WITH INERT MATERIAL? 457.
	_____ gallons	☐ Yes ☐ No

UST - Tank Form Page 1 Instructions
(Formerly SWRCB Permit Application Form B)

Complete a separate form for each tank for all new permits, permit changes, or any facility information changes. This form must be submitted within 30 days of permit or facility information changes, unless your local agency requires approval prior to makir changes. For compartmentalized tanks, each compartment is considered a separate tank and requires completion of a separate tank form. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

1. FACILITY ID NUMBER - This space is for agency use only.
3. BUSINESS NAME - Enter the complete Facility Name.
430. TYPE OF ACTION - Check the reason why this form is being submitted. For amended permits and changes of information, include a brief statement summarizing the amendment or change.
431. LOCATION WITHIN SITE - You may use this space to describe the location of the tank within the facility.
432. TANK ID NUMBER - If the UST owner has assigned an in-house tank ID number to this tank, enter that number in this space.
433. TANK MANUFACTURER - Enter the name of the company that manufactured the tank.
434. COMPARTMENTALIZED TANK - Check the appropriate box to indicate whether or not the tank is compartmentalized. Each compartment is considered a separate tank.
435. DATE TANK INSTALLED - Enter the year and month the tank was installed.
436. TANK CAPACITY - Enter the tank capacity in gallons.
437. NUMBER OF TANK COMPARTMENTS - If the tank is compartmentalized, enter the number of compartments.
438. ADDITIONAL DESCRIPTION - You may use this space to provide additional tank or location information.
439. TANK USE - Check the substance stored. If motor vehicle fuel, check box 1 and complete item 440, PETROLEUM TYPE.
440. PETROLEUM TYPE - If box 1 in item 439 is checked, indicate the specific type/grade of fuel stored.
441. COMMON NAME - For substances other than motor vehicle fuels, enter the common name of the substance stored.
442. CAS # - For substances other than motor vehicle fuels, enter the CAS (Chemical Abstract Service) number.
443. TYPE OF TANK - Check the type of tank construction. If type of tank is not listed, check "other" and specify type in the space provided.
444. TANK MATERIAL (PRIMARY TANK) - Check the material of construction of the inner tank (i.e. inner tank wall nearest the hazardous substance stored). If the tank is lined, describe the lining material in item 446, not in this section. If the tank material is not listed, check "other" and specify the material in the space provided.
445. TANK MATERIAL (SECONDARY TANK) - Check material of construction of the tank that provides containment external t and separate from, the primary containment described above. If the tank material is not listed, check "other" and specify the material in the space provided. If the tank is a single-wall tank, skip item 445.
446. TANK INTERIOR LINING OR COATING - Check the material of construction of any interior lining or coating in the tank. If unlined, check "unlined." If the type of interior lining or coating is not listed, check "other" and specify the lining material in the space provided.
447. DATE TANK INTERIOR LINING INSTALLED - If applicable, enter the date the tank interior lining was installed.
448. OTHER TANK CORROSION PROTECTION - If any other tank corrosion protection methods are used, check the appropriate boxes to describe them. If methods used are not listed, check "other" and describe in the space provided.
449. DATE TANK CORROSION PROTECTION INSTALLED - If applicable, enter the date tank corrosion protection was installed.
450. YEAR SPILL AND OVERFILL INSTALLED - Check the appropriate boxes to indicate whether drop tube(s), spill containment, and striker plate(s) are installed. In the spaces provided, specify the year each type of equipment was installed.
451. TYPE OF SPILL PROTECTION - Enter the type of spill containment, drop tube, and striker plate installed.
452. YEAR OVERFILL PROTECTION EQUIPMENT INSTALLED - Check the appropriate box(es) to describe the type(s) of overfill protection equipment installed. In the space provided, specify the year this equipment was installed.
453. TANK LEAK DETECTION (SINGLE WALL TANKS ONLY) - Check the leak detection system(s) used to comply with monitoring requirements for the tank itself. CHECK ALL THAT APPLY. If you use a leak detection system that is not listed, check "other" and describe the system in the space provided.
454. TANK LEAK DETECTION (DOUBLE WALL TANKS) - For double wall tanks, tanks in vaults, or tanks with a bladder, check the leak detection system(s) used to monitor the tank secondary containment system. CHECK ONE ITEM ONLY.
455. ESTIMATED DATE LAST USED - Complete this section only if the tank was closed in place. Enter the date the tank was last used.
456. ESTIMATED QUANTITY OF SUBSTANCE REMAINING IN TANK - Complete this section only if the tank was closed in place. Enter the estimated quantity of hazardous substance remaining in the tank (in gallons).
457. TANK FILLED WITH INERT MATERIAL - Complete this section only if the tank was closed in place. Check whether or not the tank was filled with an inert material prior to closure.

UNIFIED PROGRAM CONSOLIDATED FORM
TANKS

UNDERGROUND STORAGE TANKS – TANK PAGE 2

VI. PIPING CONSTRUCTION (Check all that apply)

	UNDERGROUND PIPING				ABOVEGROUND PIPING			
SYSTEM TYPE	☐ 1. PRESSURE	☒ 2. SUCTION	☐ 3. GRAVITY	458.	☐ 1. PRESSURE	☐ 2. SUCTION	☐ 3. GRAVITY	459.
CONSTRUCTION/ MANUFACTURER	☐ 1. SINGLE WALL	☐ 3. LINED TRENCH	☐ 99. OTHER	460.	☐ 1. SINGLE WALL	☐ 95. UNKNOWN		462.
	☒ 2. DOUBLE WALL	☐ 95. UNKNOWN			☐ 2. DOUBLE WALL	☐ 99. OTHER		
MANUFACTURER				461.	MANUFACTURER			463.

☐ 1. BARE STEEL	☐ 6. FRP COMPATIBLE W/100% METHANOL				☐ 1. BARE STEEL	☐ 6. FRP COMPATIBLE W/100% METHANOL		
☐ 2. STAINLESS STEEL	☐ 7. GALVANIZED STEEL				☐ 2. STAINLESS STEEL	☐ 7. GALVANIZED STEEL		
☐ 3. PLASTIC COMPATIBLE WITH CONTENTS	☐ 95. UNKNOWN				☐ 3. PLASTIC COMPATIBLE W/ CONTENTS	☐ 8. FLEXIBLE (HDPE)	☐ 99. OTHER	
☒ 4. FIBERGLASS	☐ 8. FLEXIBLE (HDPE)	☐ 99. OTHER			☐ 4. FIBERGLASS	☐ 9. CATHODIC PROTECTION		
☐ 5. STEEL W/COATING	☐ 9. CATHODIC PROTECTION			464.	☐ 5. STEEL W/COATING	☐ 95. UNKNOWN		465.

VII. PIPING LEAK DETECTION (Check all that apply) (A description of the monitoring program shall be submitted to the local agency.)

UNDERGROUND PIPING

SINGLE WALL PIPING 466.

PRESSURIZED PIPING (Check all that apply):

☐ 1. ELECTRONIC LINE LEAK DETECTOR 3.0 GPH TEST WITH AUTO PUMP SHUT-OFF FOR LEAK, SYSTEM FAILURE, AND SYSTEM DISCONNECTION + AUDIBLE AND VISUAL ALARMS.

☐ 2. MONTHLY 0.2 GPH TEST

☐ 3. ANNUAL INTEGRITY TEST (0.1 GPH)

CONVENTIONAL SUCTION SYSTEMS

☐ 5. DAILY VISUAL MONITORING OF PUMPING SYSTEM + TRIENNIAL PIPING INTEGRITY TEST (0.1 GPH)

SAFE SUCTION SYSTEMS (NO VALVES IN BELOW GROUND PIPING):

☐ 7. SELF MONITORING

GRAVITY FLOW

☐ 9. BIENNIAL INTEGRITY TEST (0.1 GPH)

SECONDARILY CONTAINED PIPING

PRESSURIZED PIPING (Check all that apply):

10. CONTINUOUS TURBINE SUMP SENSOR WITH AUDIBLE AND VISUAL ALARMS AND (Check one)
  - ☐ a. AUTO PUMP SHUT OFF WHEN A LEAK OCCURS
  - ☐ b. AUTO PUMP SHUT OFF FOR LEAKS, SYSTEM FAILURE AND SYSTEM DISCONNECTION
  - ☐ c. NO AUTO PUMP SHUT OFF

☐ 11. AUTOMATIC LINE LEAK DETECTOR (3.0 GPH TEST) WITH FLOW SHUT OFF OR RESTRICTION

☐ 12. ANNUAL INTEGRITY TEST (0.1 GPH)

SUCTION/GRAVITY SYSTEM

☒ 13. CONTINUOUS SUMP SENSOR + AUDIBLE AND VISUAL ALARMS

EMERGENCY GENERATORS ONLY (Check all that apply)

☒ 14. CONTINUOUS SUMP SENSOR WITHOUT AUTO PUMP SHUT OFF AUDIBLE AND VISUAL ALARMS

☐ 15. AUTOMATIC LINE LEAK DETECTOR (3.0 GPH TEST) WITHOUT FLOW SHUT OFF OR RESTRICTION

☒ 16. ANNUAL INTEGRITY TEST (0.1 GPH)

☐ 17. DAILY VISUAL CHECK

ABOVEGROUND PIPING

SINGLE WALL PIPING 467.

PRESSURIZED PIPING (Check all that apply):

☐ 1. ELECTRONIC LINE LEAK DETECTOR 3.0 GPH TEST WITH AUTO PUMP SHUT OFF FOR LEAK, SYSTEM FAILURE, AND SYSTEM DISCONNECTION + AUDIBLE AND VISUAL ALARMS.

☐ 2. MONTHLY 0.2 GPH TEST

☐ 3. ANNUAL INTEGRITY TEST (0.1 GPH)

☐ 4. DAILY VISUAL CHECK

CONVENTIONAL SUCTION SYSTEMS (Check all that apply)

☐ 5. DAILY VISUAL MONITORING OF PIPING AND PUMPING SYSTEM

☐ 6. TRIENNIAL INTEGRITY TEST (0.1 GPH)

SAFE SUCTION SYSTEMS (NO VALVES IN BELOW GROUND PIPING):

☐ 7. SELF MONITORING

GRAVITY FLOW (Check all that apply):

☐ 8. DAILY VISUAL MONITORING

☐ 9. BIENNIAL INTEGRITY TEST (0.1 GPH)

SECONDARILY CONTAINED PIPING

PRESSURIZED PIPING (Check all that apply):

10. CONTINUOUS TURBINE SUMP SENSOR WITH AUDIBLE AND VISUAL ALARMS AND (Check one)
  - ☐ a. AUTO PUMP SHUT OFF WHEN A LEAK OCCURS
  - ☐ b. AUTO PUMP SHUT OFF FOR LEAKS, SYSTEM FAILURE AND SYSTEM DISCONNECTION
  - ☐ c. NO AUTO PUMP SHUT OFF

☐ 11. AUTOMATIC LEAK DETECTOR

☐ 12. ANNUAL INTEGRITY TEST (0.1 GPH)

SUCTION/GRAVITY SYSTEM

☐ 13. CONTINUOUS SUMP SENSOR + AUDIBLE AND VISUAL ALARMS

EMERGENCY GENERATORS ONLY (Check all that apply)

☐ 14. CONTINUOUS SUMP SENSOR WITHOUT AUTO PUMP SHUT OFF AUDIBLE AND VISUAL ALARMS

☐ 15. AUTOMATIC LINE LEAK DETECTOR (3.0 GPH TEST)

☐ 16. ANNUAL INTEGRITY TEST (0.1 GPH)

☐ 17. DAILY VISUAL CHECK

VIII. DISPENSER CONTAINMENT

DISPENSER CONTAINMENT 468.

DATE INSTALLED

N/A

- ☐ 1. FLOAT MECHANISM THAT SHUTS OFF SHEAR VALVE
- ☐ 2. CONTINUOUS DISPENSER PAN SENSOR + AUDIBLE AND VISUAL ALARMS
- ☐ 3. CONTINUOUS DISPENSER PAN SENSOR WITH AUTO SHUT OFF FOR DISPENSER + AUDIBLE AND VISUAL ALARMS
- ☐ 4. DAILY VISUAL CHECK 469.
- ☐ 5. TRENCH/LINER MONITORING
- ☐ 6. NONE

IX. OWNER/OPERATOR SIGNATURE

I certify that the information provided herein is true and accurate to the best of my knowledge.

SIGNATURE OF OWNER/OPERATOR: [signature] DATE: 2-28-2008 TK-3-2 470.

NAME OF OWNER/OPERATOR (print): David McGraw

TITLE OF OWNER/OPERATOR: Associate Lab Director / COO 472.

Permit Number (Agency use only) 473.	Permit Approved By (Agency use only) 474.	Permit Expiration Date (Agency use only) 475.

UST - Tank Form Page 2 Instructions
(Formerly SWRCB Permit Application Form B)

Please number all pages of your submittal.

458. PIPING SYSTEM TYPE (UNDERGROUND) -

459. PIPING SYSTEM TYPE (ABOVEGROUND) -

For items 458 and 459, check the appropriate boxes to describe the type of product/waste piping installed in this tank system. Describe underground and aboveground (if any) piping separately in the columns provided.

460. PIPING CONSTRUCTION (UNDERGROUND) - Check the appropriate box(es) to describe the type(s) of containment provided for the underground product/waste piping.

461. PIPING MANUFACTURER (UNDERGROUND) - Enter the name of the piping manufacturer.

462. PIPING CONSTRUCTION (ABOVEGROUND) - Check the appropriate box(es) to describe the type(s) of containment provided for any aboveground portions of the product/waste piping.

463. PIPING MANUFACTURER (ABOVEGROUND) - Enter the name of the piping manufacturer.

464. PIPING MATERIAL AND CORROSION PROTECTION (UNDERGROUND) - Check the appropriate boxes to describe the material(s) of construction of the primary (i.e. inner) underground product/waste piping and indicate whether any cathodic (i.e. corrosion) protection systems are installed.

465. PIPING MATERIAL AND CORROSION PROTECTION (ABOVEGROUND) - Check the appropriate boxes to describe the material(s) of construction of any primary (i.e. inner) aboveground product/waste piping and indicate whether any cathodic (i.e. corrosion) protection systems are installed.

466. PIPING LEAK DETECTION (UNDERGROUND) -

467. PIPING LEAK DETECTION (ABOVEGROUND)-

For items 466 and 467, check the appropriate boxes to describe all leak detection method(s) used to comply with the monitoring requirements for regulated piping.

468. DATE DISPENSER CONTAINMENT INSTALLED - If the tank system is equipped with dispenser secondary containment (i.e. dispenser sumps or pans) equipment, enter the date that equipment was installed. If the tank system has a dispenser that is not secondarily contained, specify "None" in the space provided for the date. If the system does not include dispensers (e.g. standby generator tank system), enter "N/A."

469. DISPENSER CONTAINMENT TYPE - Check the appropriate box to describe how dispenser secondary containment is monitored for leaks.

SIGNATURE OF OWNER/OPERATOR - The owner or an authorized agent of the owner shall sign in the space provided. This signature certifies that the signer believes that all information submitted is true, accurate, and complete.

470 DATE CERTIFIED - Enter the date the form was signed.

471. OWNER/ OPERATOR NAME - Print or type the name of the person signing the form.

472. OWNER/ OPERATOR TITLE - Enter the title of the person signing the form.

473. PERMIT NUMBER - This space is for agency use only.

474. PERMIT APPROVED BY - This space is for agency use only.

475. PERMIT EXPIRATION DATE - This space is for agency use only.

UNIFIED PROGRAM CONSOLIDATED FORM
TANKS

UNDERGROUND STORAGE TANKS – TANK PAGE 1

(Two pages per tank)

TYPE OF ACTION (Check one item only) ☐ 1. NEW PERMIT ☐ 4. AMENDED PERMIT ☐ 5. CHANGE OF INFORMATION (Specify reason) ☐ 6. TEMPORARY TANK CLOSURE ☒ 3. RENEWAL PERMIT (Specify reason) ☐ 7. PERMANENTLY CLOSED ON SITE ☐ 8. TANK REMOVED 430.

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As) 3.
Lawrence Berkeley National Laboratory

FACILITY ID: 1.

LOCATION WITHIN SITE (Optional) 431.
Building 2 - North Side

I. TANK DESCRIPTION

(A scaled plot plan with the location of the UST system including buildings and landmarks shall be submitted to the local agency.)

TANK ID # 432.	TANK MANUFACTURER 433.	COMPARTMENTALIZED TANK ☐ Yes ☒ No 434.
TK-4-2	Owens-Corning	If "Yes," complete one page for each compartment.
DATE INSTALLED (YEAR/MO) 435.	TANK CAPACITY IN GALLONS 436.	NUMBER OF COMPARTMENTS 437.
1988/July	4,000	N/A

ADDITIONAL DESCRIPTION (For local use only) 438.

II. TANK CONTENTS

TANK USE 439.
☐ 1. MOTOR VEHICLE FUEL (If checked, complete Petroleum Type)
☒ 2. NON-FUEL PETROLEUM
☐ 3. CHEMICAL PRODUCT
☐ 4. HAZARDOUS WASTE (Includes Used Oil)
☐ 95. UNKNOWN

PETROLEUM TYPE 440.
☐ 1a. REGULAR UNLEADED ☐ 2. LEADED ☐ 5. JET FUEL
☐ 1b. PREMIUM UNLEADED ☒ 3. DIESEL ☐ 6. AVIATION GAS
☐ 1c. MIDGRADE UNLEADED ☐ 4. GASOHOL ☐ 99. OTHER: _____

COMMON NAME (from Hazardous Materials Inventory page) 441.
Diesel #2

CAS# (from Hazardous Materials Inventory page) 442.
68476346

III. TANK CONSTRUCTION

TYPE OF TANK (Check one item only) ☐ 1. SINGLE WALL ☐ 2. DOUBLE WALL ☐ 3. SINGLE WALL WITH EXTERIOR MEMBRANE LINER ☐ 4. SINGLE WALL IN A VAULT ☐ 5. SINGLE WALL WITH INTERNAL BLADDER SYSTEM ☐ 95. UNKNOWN ☐ 99. OTHER ____ 443.

TANK MATERIAL – primary tank (Check one item only) ☐ 1. BARE STEEL ☐ 2. STAINLESS STEEL ☒ 3. FIBERGLASS / PLASTIC ☐ 4. STEEL CLAD W/FIBERGLASS REINFORCED PLASTIC (FRP) ☐ 5. CONCRETE ☐ 8. FRP COMPATIBLE W/100% METHANOL ☐ 95. UNKNOWN ☐ 99. OTHER: _____ 444.

TANK MATERIAL – secondary tank (Check one item only) ☐ 1. BARE STEEL ☐ 2. STAINLESS STEEL ☒ 3. FIBERGLASS / PLASTIC ☐ 4. STEEL CLAD W/FIBERGLASS REINFORCED PLASTIC (FRP) ☐ 5. CONCRETE ☐ 8. FRP COMPTIBLE W/100% METHANOL ☐ 9. FRP NON-CORRODABLE JACKET ☐ 10. COATED STEEL ☐ 95. UNKNOWN ☐ 99. OTHER _____ 445.

TANK INTERIOR LINING OR COATING (Check one item only) ☐ 1. RUBBER LINED ☐ 2. ALKYD LINING ☐ 3. EPOXY LINING ☐ 4. PHENOLIC LINING ☐ 5. GLASS LINING ☐ 6. UNLINED ☐ 95. UNKNOWN ☐ 99. OTHER _____ 446. DATE INSTALLED 447.

OTHER CORROSION PROTECTION (If Applicable) ☐ 1. MANUFACTURED CATHODIC PROTECTION ☐ 2. SACRIFICIAL ANODE ☐ 3. FIBERGLASS REINFORCED PLASTIC ☐ 4. IMPRESSED CURRENT ☐ 95. UNKNOWN ☐ 99. OTHER _____ 448. DATE INSTALLED 449.

SPILL AND OVERFILL (Check all that apply) YEAR INSTALLED 450.
☒ 1. SPILL CONTAINMENT 1988
☒ 2. DROP TUBE 1988
☒ 3. STRIKER PLATE 1988

TYPE 451.

OVERFILL PROTECTION EQUIPMENT: YEAR INSTALLED 452.
☒ 1. ALARM Feb '03 ☒ 3. FILL TUBE SHUT OFF VALVE 1988
☐ 2. BALL FLOAT ____ ☐ 4. EXEMPT

IV. TANK LEAK DETECTION

(A description of the monitoring program shall be submitted to the local agency.)

IF SINGLE WALL TANK (Check all that apply) 453.
☐ 1. VISUAL (EXPOSED PORTION ONLY)
☐ 2. AUTOMATIC TANK GAUGING (ATG)
☐ 3. CONTINUOUS ATG
☐ 4. STATISTICAL INVENTORY RECONCILIATION (SIR) + BIENNIAL TANK TESTING
☐ 5. MANUAL TANK GAUGING (MTG)
☐ 6. VADOSE ZONE
☐ 7. GROUNDWATER
☐ 8. TANK TESTING
☐ 99. OTHER _____

IF DOUBLE WALL TANK OR TANK WITH BLADDER (Check one item only) 454.
☐ 1. VISUAL (SINGLE WALL IN VAULT ONLY)
☒ 2. CONTINUOUS INTERSTITIAL MONITORING
☐ 3. MANUAL MONITORING

V. TANK CLOSURE INFORMATION / PERMANENT CLOSURE IN PLACE

ESTIMATED DATE LAST USED (YR/MO/DAY) 455.	ESTIMATED QUANTITY OF SUBSTANCE REMAINING 456.	TANK FILLED WITH INERT MATERIAL? 457.
	_____ gallons	☐ Yes ☐ No

UST - Tank Form Page 1 Instructions
(Formerly SWRCB Permit Application Form B)

Complete a separate form for each tank for all new permits, permit changes, or any facility information changes. This form must be submitted within 30 days of permit or facility information changes, unless your local agency requires approval prior to maki changes. For compartmentalized tanks, each compartment is considered a separate tank and requires completion of a separate tan form. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

1. FACILITY ID NUMBER - This space is for agency use only.
3. BUSINESS NAME - Enter the complete Facility Name.
430. TYPE OF ACTION - Check the reason why this form is being submitted. For amended permits and changes of information, include a brief statement summarizing the amendment or change.
431. LOCATION WITHIN SITE - You may use this space to describe the location of the tank within the facility.
432. TANK ID NUMBER - If the UST owner has assigned an in-house tank ID number to this tank, enter that number in this space.
433. TANK MANUFACTURER - Enter the name of the company that manufactured the tank.
434. COMPARTMENTALIZED TANK - Check the appropriate box to indicate whether or not the tank is compartmentalized. Each compartment is considered a separate tank.
435. DATE TANK INSTALLED - Enter the year and month the tank was installed.
436. TANK CAPACITY - Enter the tank capacity in gallons.
437. NUMBER OF TANK COMPARTMENTS - If the tank is compartmentalized, enter the number of compartments.
438. ADDITIONAL DESCRIPTION - You may use this space to provide additional tank or location information.
439. TANK USE - Check the substance stored. If motor vehicle fuel, check box 1 and complete item 440, PETROLEUM TYPE.
440. PETROLEUM TYPE - If box 1 in item 439 is checked, indicate the specific type/grade of fuel stored.
441. COMMON NAME - For substances other than motor vehicle fuels, enter the common name of the substance stored.
442. CAS # - For substances other than motor vehicle fuels, enter the CAS (Chemical Abstract Service) number.
443. TYPE OF TANK - Check the type of tank construction. If type of tank is not listed, check "other" and specify type in the space provided.
444. TANK MATERIAL (PRIMARY TANK) - Check the material of construction of the inner tank (i.e. inner tank wall nearest the hazardous substance stored). If the tank is lined, describe the lining material in item 446, not in this section. If the tank material is not listed, check "other" and specify the material in the space provided.
445. TANK MATERIAL (SECONDARY TANK) - Check material of construction of the tank that provides containment external t and separate from, the primary containment described above. If the tank material is not listed, check "other" and specify the material in the space provided. If the tank is a single-wall tank, skip item 445.
446. TANK INTERIOR LINING OR COATING - Check the material of construction of any interior lining or coating in the tank. If unlined, check "unlined." If the type of interior lining or coating is not listed, check "other" and specify the lining material in the space provided.
447. DATE TANK INTERIOR LINING INSTALLED - If applicable, enter the date the tank interior lining was installed.
448. OTHER TANK CORROSION PROTECTION - If any other tank corrosion protection methods are used, check the appropriate boxes to describe them. If methods used are not listed, check "other" and describe in the space provided.
449. DATE TANK CORROSION PROTECTION INSTALLED - If applicable, enter the date tank corrosion protection was installed.
450. YEAR SPILL AND OVERFILL INSTALLED - Check the appropriate boxes to indicate whether drop tube(s), spill containment, and striker plate(s) are installed. In the spaces provided, specify the year each type of equipment was installed.
451. TYPE OF SPILL PROTECTION - Enter the type of spill containment, drop tube, and striker plate installed.
452. YEAR OVERFILL PROTECTION EQUIPMENT INSTALLED - Check the appropriate box(es) to describe the type(s) of overfill protection equipment installed. In the space provided, specify the year this equipment was installed.
453. TANK LEAK DETECTION (SINGLE WALL TANKS ONLY) - Check the leak detection system(s) used to comply with monitoring requirements for the tank itself. CHECK ALL THAT APPLY. If you use a leak detection system that is not listed, check "other" and describe the system in the space provided.
454. TANK LEAK DETECTION (DOUBLE WALL TANKS) - For double wall tanks, tanks in vaults, or tanks with a bladder, check the leak detection system(s) used to monitor the tank secondary containment system. CHECK ONE ITEM ONLY.
455. ESTIMATED DATE LAST USED - Complete this section only if the tank was closed in place. Enter the date the tank was last used.
456. ESTIMATED QUANTITY OF SUBSTANCE REMAINING IN TANK - Complete this section only if the tank was closed in place. Enter the estimated quantity of hazardous substance remaining in the tank (in gallons).
457. TANK FILLED WITH INERT MATERIAL - Complete this section only if the tank was closed in place. Check whether or not the tank was filled with an inert material prior to closure.

UNIFIED PROGRAM CONSOLIDATED FORM
TANKS

UNDERGROUND STORAGE TANKS – TANK PAGE 2

VI. PIPING CONSTRUCTION (Check all that apply)

	UNDERGROUND PIPING				ABOVEGROUND PIPING			
SYSTEM TYPE	☐ 1. PRESSURE	☒ 2. SUCTION	☐ 3. GRAVITY	458.	☐ 1. PRESSURE	☐ 2. SUCTION	☐ 3. GRAVITY	459.
CONSTRUCTION/ MANUFACTURER	☐ 1. SINGLE WALL	☐ 3. LINED TRENCH	☐ 99. OTHER	460.	☐ 1. SINGLE WALL	☐ 95. UNKNOWN		462.
	☒ 2. DOUBLE WALL	☐ 95. UNKNOWN			☐ 2. DOUBLE WALL	☐ 99. OTHER		
MANUFACTURER				461.	MANUFACTURER			463.
☐ 1. BARE STEEL	☐ 6. FRP COMPATIBLE W/100% METHANOL				☐ 1. BARE STEEL	☐ 6. FRP COMPATIBLE W/100% METHANOL		
☐ 2. STAINLESS STEEL	☐ 7. GALVANIZED STEEL				☐ 2. STAINLESS STEEL	☐ 7. GALVANIZED STEEL		
☐ 3. PLASTIC COMPATIBLE WITH CONTENTS	☐ 95. UNKNOWN				☐ 3. PLASTIC COMPATIBLE W/ CONTENTS	☐ 8. FLEXIBLE (HDPE)	☐ 99. OTHER	
☒ 4. FIBERGLASS	☐ 8. FLEXIBLE (HDPE)	☐ 99. OTHER			☐ 4. FIBERGLASS	☐ 9. CATHODIC PROTECTION		
☐ 5. STEEL W/COATING	☐ 9. CATHODIC PROTECTION			464.	☐ 5. STEEL W/COATING	☐ 95. UNKNOWN		465.

VII. PIPING LEAK DETECTION (Check all that apply) (A description of the monitoring program shall be submitted to the local agency.)

UNDERGROUND PIPING

SINGLE WALL PIPING 466.

PRESSURIZED PIPING (Check all that apply):

☐ 1. ELECTRONIC LINE LEAK DETECTOR 3.0 GPH TEST WITH AUTO PUMP SHUT-OFF FOR LEAK, SYSTEM FAILURE, AND SYSTEM DISCONNECTION + AUDIBLE AND VISUAL ALARMS.

☐ 2. MONTHLY 0.2 GPH TEST

☐ 3. ANNUAL INTEGRITY TEST (0.1 GPH)

CONVENTIONAL SUCTION SYSTEMS

☐ 5. DAILY VISUAL MONITORING OF PUMPING SYSTEM + TRIENNIAL PIPING INTEGRITY TEST (0.1 GPH)

SAFE SUCTION SYSTEMS (NO VALVES IN BELOW GROUND PIPING):

☐ 7. SELF MONITORING

GRAVITY FLOW

☐ 9. BIENNIAL INTEGRITY TEST (0.1 GPH)

SECONDARILY CONTAINED PIPING

PRESSURIZED PIPING (Check all that apply):

10. CONTINUOUS TURBINE SUMP SENSOR WITH AUDIBLE AND VISUAL ALARMS AND (Check one)
  - ☐ a. AUTO PUMP SHUT OFF WHEN A LEAK OCCURS
  - ☐ b. AUTO PUMP SHUT OFF FOR LEAKS, SYSTEM FAILURE AND SYSTEM DISCONNECTION
  - ☐ c. NO AUTO PUMP SHUT OFF

☐ 11. AUTOMATIC LINE LEAK DETECTOR (3.0 GPH TEST) WITH FLOW SHUT OFF OR RESTRICTION

☐ 12. ANNUAL INTEGRITY TEST (0.1 GPH)

SUCTION/GRAVITY SYSTEM

☒ 13. CONTINUOUS SUMP SENSOR + AUDIBLE AND VISUAL ALARMS

EMERGENCY GENERATORS ONLY (Check all that apply)

☒ 14. CONTINUOUS SUMP SENSOR WITHOUT AUTO PUMP SHUT OFF AUDIBLE AND VISUAL ALARMS

☐ 15. AUTOMATIC LINE LEAK DETECTOR (3.0 GPH TEST) WITHOUT FLOW SHUT OFF OR RESTRICTION

☒ 16. ANNUAL INTEGRITY TEST (0.1 GPH)

☐ 17. DAILY VISUAL CHECK

ABOVEGROUND PIPING

SINGLE WALL PIPING 467.

PRESSURIZED PIPING (Check all that apply):

☐ 1. ELECTRONIC LINE LEAK DETECTOR 3.0 GPH TEST WITH AUTO PUMP SHUT OFF FOR LEAK, SYSTEM FAILURE, AND SYSTEM DISCONNECTION + AUDIBLE AND VISUAL ALARMS.

☐ 2. MONTHLY 0.2 GPH TEST

☐ 3. ANNUAL INTEGRITY TEST (0.1 GPH)

☐ 4. DAILY VISUAL CHECK

CONVENTIONAL SUCTION SYSTEMS (Check all that apply)

☐ 5. DAILY VISUAL MONITORING OF PIPING AND PUMPING SYSTEM

☐ 6. TRIENNIAL INTEGRITY TEST (0.1 GPH)

SAFE SUCTION SYSTEMS (NO VALVES IN BELOW GROUND PIPING):

☐ 7. SELF MONITORING

GRAVITY FLOW (Check all that apply):

☐ 8. DAILY VISUAL MONITORING

☐ 9. BIENNIAL INTEGRITY TEST (0.1 GPH)

SECONDARILY CONTAINED PIPING

PRESSURIZED PIPING (Check all that apply):

10. CONTINUOUS TURBINE SUMP SENSOR WITH AUDIBLE AND VISUAL ALARMS AND (Check one)
  - ☐ a. AUTO PUMP SHUT OFF WHEN A LEAK OCCURS
  - ☐ b. AUTO PUMP SHUT OFF FOR LEAKS, SYSTEM FAILURE AND SYSTEM DISCONNECTION
  - ☐ c. NO AUTO PUMP SHUT OFF

☐ 11. AUTOMATIC LEAK DETECTOR

☐ 12. ANNUAL INTEGRITY TEST (0.1 GPH)

SUCTION/GRAVITY SYSTEM

☐ 13. CONTINUOUS SUMP SENSOR + AUDIBLE AND VISUAL ALARMS

EMERGENCY GENERATORS ONLY (Check all that apply)

☐ 14. CONTINUOUS SUMP SENSOR WITHOUT AUTO PUMP SHUT OFF AUDIBLE AND VISUAL ALARMS

☐ 15. AUTOMATIC LINE LEAK DETECTOR (3.0 GPH TEST)

☐ 16. ANNUAL INTEGRITY TEST (0.1 GPH)

☐ 17. DAILY VISUAL CHECK

VIII. DISPENSER CONTAINMENT

DISPENSER CONTAINMENT 468.

DATE INSTALLED

N/A

- ☐ 1. FLOAT MECHANISM THAT SHUTS OFF SHEAR VALVE
- ☐ 2. CONTINUOUS DISPENSER PAN SENSOR + AUDIBLE AND VISUAL ALARMS
- ☐ 3. CONTINUOUS DISPENSER PAN SENSOR WITH AUTO SHUT OFF FOR DISPENSER + AUDIBLE AND VISUAL ALARMS
- ☐ 4. DAILY VISUAL CHECK 469.
- ☐ 5. TRENCH/LINER MONITORING
- ☐ 6. NONE

IX. OWNER/OPERATOR SIGNATURE

I certify that the information provided herein is true and accurate to the best of my knowledge.

SIGNATURE OF OWNER/OPERATOR: [signature] DATE: 2.26.2000 TK-4-2 470.

NAME OF OWNER/OPERATOR (print): David McGraw TITLE OF OWNER/OPERATOR: Associate Lab Director / COO 472.

Permit Number (Agency use only) 473.	Permit Approved By (Agency use only) 474.	Permit Expiration Date (Agency use only) 475.

UST - Tank Form Page 2 Instructions
(Formerly SWRCB Permit Application Form B)

Please number all pages of your submittal.

458. PIPING SYSTEM TYPE (UNDERGROUND) -

459. PIPING SYSTEM TYPE (ABOVEGROUND) -

For items 458 and 459, check the appropriate boxes to describe the type of product/waste piping installed in this tank system. Describe underground and aboveground (if any) piping separately in the columns provided.

460. PIPING CONSTRUCTION (UNDERGROUND) - Check the appropriate box(es) to describe the type(s) of containment provided for the underground product/waste piping.

461. PIPING MANUFACTURER (UNDERGROUND) - Enter the name of the piping manufacturer.

462. PIPING CONSTRUCTION (ABOVEGROUND) - Check the appropriate box(es) to describe the type(s) of containment provided for any aboveground portions of the product/waste piping.

463. PIPING MANUFACTURER (ABOVEGROUND) - Enter the name of the piping manufacturer.

464. PIPING MATERIAL AND CORROSION PROTECTION (UNDERGROUND) - Check the appropriate boxes to describe the material(s) of construction of the primary (i.e. inner) underground product/waste piping and indicate whether any cathodic (i.e. corrosion) protection systems are installed.

465. PIPING MATERIAL AND CORROSION PROTECTION (ABOVEGROUND) - Check the appropriate boxes to describe the material(s) of construction of any primary (i.e. inner) aboveground product/waste piping and indicate whether any cathodic (i.e. corrosion) protection systems are installed.

466. PIPING LEAK DETECTION (UNDERGROUND) -

467. PIPING LEAK DETECTION (ABOVEGROUND)-

For items 466 and 467, check the appropriate boxes to describe all leak detection method(s) used to comply with the monitoring requirements for regulated piping.

468. DATE DISPENSER CONTAINMENT INSTALLED - If the tank system is equipped with dispenser secondary containment (i.e. dispenser sumps or pans) equipment, enter the date that equipment was installed. If the tank system has a dispenser that is not secondarily contained, specify "None" in the space provided for the date. If the system does not include dispensers (e.g. standby generator tank system), enter "N/A."

469. DISPENSER CONTAINMENT TYPE - Check the appropriate box to describe how dispenser secondary containment is monitored for leaks.

SIGNATURE OF OWNER/OPERATOR - The owner or an authorized agent of the owner shall sign in the space provided. This signature certifies that the signer believes that all information submitted is true, accurate, and complete.

470 DATE CERTIFIED - Enter the date the form was signed.

471. OWNER/ OPERATOR NAME - Print or type the name of the person signing the form.

472. OWNER/ OPERATOR TITLE - Enter the title of the person signing the form.

473. PERMIT NUMBER - This space is for agency use only.

474. PERMIT APPROVED BY - This space is for agency use only.

475. PERMIT EXPIRATION DATE - This space is for agency use only.

UNIFIED PROGRAM CONSOLIDATED FORM
TANKS

UNDERGROUND STORAGE TANKS – TANK PAGE 1

(Two pages per tank)

TYPE OF ACTION (Check one item only) ☐ 1. NEW PERMIT ☐ 4. AMENDED PERMIT ☐ 5. CHANGE OF INFORMATION (Specify reason) ☐ 6. TEMPORARY TANK CLOSURE ☒ 3. RENEWAL PERMIT (Specify reason) ☐ 7. PERMANENTLY CLOSED ON SITE ☐ 8. TANK REMOVED 430.

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As) 5.
Lawrence Berkeley National Laboratory

FACILITY ID: 1.

LOCATION WITHIN SITE (Optional) 431.
Northeast corner of Building 90, between Building 55 and Building 90

I. TANK DESCRIPTION

(A scaled plot plan with the location of the UST system including buildings and landmarks shall be submitted to the local agency.)

TANK ID # 432.	TANK MANUFACTURER 433.	COMPARTMENTALIZED TANK ☐ Yes ☒ No 434.
TK-1-55		If "Yes," complete one page for each compartment.
DATE INSTALLED (YEAR/MO) 435.	TANK CAPACITY IN GALLONS 436.	NUMBER OF COMPARTMENTS 437.
1986	1,000	N/A

ADDITIONAL DESCRIPTION (For local use only) 438.

II. TANK CONTENTS

TANK USE 439.
☐ 1. MOTOR VEHICLE FUEL (If checked, complete Petroleum Type)
☒ 2. NON-FUEL PETROLEUM
☐ 3. CHEMICAL PRODUCT
☐ 4. HAZARDOUS WASTE (Includes Used Oil)
☐ 95. UNKNOWN

PETROLEUM TYPE 440.
☐ 1a. REGULAR UNLEADED ☐ 2. LEADED ☐ 5. JET FUEL
☐ 1b. PREMIUM UNLEADED ☒ 3. DIESEL ☐ 6. AVIATION GAS
☐ 1c. MIDGRADE UNLEADED ☐ 4. GASOHOL ☐ 99. OTHER: _____

COMMON NAME (from Hazardous Materials Inventory page) 441.
Diesel #2

CAS# (from Hazardous Materials Inventory page) 442.
68476346

III. TANK CONSTRUCTION

TYPE OF TANK (Check one item only) ☐ 1. SINGLE WALL ☐ 3. SINGLE WALL WITH EXTERIOR MEMBRANE LINER ☐ 5. SINGLE WALL WITH INTERNAL BLADDER SYSTEM ☐ 95. UNKNOWN ☒ 2. DOUBLE WALL ☐ 4. SINGLE WALL IN A VAULT ☐ 99. OTHER ____ 443.

TANK MATERIAL – primary tank (Check one item only) ☐ 1. BARE STEEL ☐ 3. FIBERGLASS / PLASTIC ☐ 5. CONCRETE ☐ 95. UNKNOWN ☐ 2. STAINLESS STEEL ☐ 4. STEEL CLAD W/FIBERGLASS REINFORCED PLASTIC (FRP) ☐ 8. FRP COMPATIBLE W/100% METHANOL ☐ 99. OTHER: _____ 444.

TANK MATERIAL – secondary tank (Check one item only) ☐ 1. BARE STEEL ☐ 3. FIBERGLASS / PLASTIC ☐ 8. FRP COMPTIBLE W/100% METHANOL ☐ 95. UNKNOWN ☐ 2. STAINLESS STEEL ☒ 4. STEEL CLAD W/FIBERGLASS REINFORCED PLASTIC (FRP) ☐ 9. FRP NON-CORRODABLE JACKET ☐ 99. OTHER _____ ☐ 5. CONCRETE ☐ 10. COATED STEEL 445.

TANK INTERIOR LINING OR COATING (Check one item only) ☐ 1. RUBBER LINED ☐ 3. EPOXY LINING ☒ 5. GLASS LINING ☐ 95. UNKNOWN ☐ 2. ALKYD LINING ☐ 4. PHENOLIC LINING ☐ 6. UNLINED ☐ 99. OTHER _____ 446. DATE INSTALLED 447.

OTHER CORROSION PROTECTION (If Applicable) ☐ 1. MANUFACTURED CATHODIC PROTECTION ☒ 3. FIBERGLASS REINFORCED PLASTIC ☐ 95. UNKNOWN ☐ 4. IMPRESSED CURRENT ☐ 99. OTHER _____ 448. DATE INSTALLED 449.
☐ 2. SACRIFICIAL ANODE

SPILL AND OVERFILL (Check all that apply) YEAR INSTALLED 450. TYPE 451.
☒ 1. SPILL CONTAINMENT 1986
☒ 2. DROP TUBE 1986
☒ 3. STRIKER PLATE 1986

OVERFILL PROTECTION EQUIPMENT: YEAR INSTALLED 452.
☒ 1. ALARM Feb '03 ☒ 3. FILL TUBE SHUT OFF VALVE 2001
☐ 2. BALL FLOAT ____ ☐ 4. EXEMPT

IV. TANK LEAK DETECTION

(A description of the monitoring program shall be submitted to the local agency.)

IF SINGLE WALL TANK (Check all that apply) 453.
☐ 1. VISUAL (EXPOSED PORTION ONLY)
☐ 2. AUTOMATIC TANK GAUGING (ATG)
☐ 3. CONTINUOUS ATG
☐ 4. STATISTICAL INVENTORY RECONCILIATION (SIR) + BIENNIAL TANK TESTING
☐ 5. MANUAL TANK GAUGING (MTG)
☐ 6. VADOSE ZONE
☐ 7. GROUNDWATER
☐ 8. TANK TESTING
☐ 99. OTHER _____

IF DOUBLE WALL TANK OR TANK WITH BLADDER (Check one item only) 454.
☐ 1. VISUAL (SINGLE WALL IN VAULT ONLY)
☒ 2. CONTINUOUS INTERSTITIAL MONITORING
☐ 3. MANUAL MONITORING

V. TANK CLOSURE INFORMATION / PERMANENT CLOSURE IN PLACE

ESTIMATED DATE LAST USED (YR/MO/DAY) 455.	ESTIMATED QUANTITY OF SUBSTANCE REMAINING 456.	TANK FILLED WITH INERT MATERIAL? 457.
	_____ gallons	☐ Yes ☐ No

UST - Tank Form Page 1 Instructions
(Formerly SWRCB Permit Application Form B)

Complete a separate form for each tank for all new permits, permit changes, or any facility information changes. This form must be submitted within 30 days of permit or facility information changes, unless your local agency requires approval prior to maki changes. For compartmentalized tanks, each compartment is considered a separate tank and requires completion of a separate tan.. form. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

1. FACILITY ID NUMBER - This space is for agency use only.
3. BUSINESS NAME - Enter the complete Facility Name.
430. TYPE OF ACTION - Check the reason why this form is being submitted. For amended permits and changes of information, include a brief statement summarizing the amendment or change.
431. LOCATION WITHIN SITE - You may use this space to describe the location of the tank within the facility.
432. TANK ID NUMBER - If the UST owner has assigned an in-house tank ID number to this tank, enter that number in this space.
433. TANK MANUFACTURER - Enter the name of the company that manufactured the tank.
434. COMPARTMENTALIZED TANK - Check the appropriate box to indicate whether or not the tank is compartmentalized. Each compartment is considered a separate tank.
435. DATE TANK INSTALLED - Enter the year and month the tank was installed.
436. TANK CAPACITY - Enter the tank capacity in gallons.
437. NUMBER OF TANK COMPARTMENTS - If the tank is compartmentalized, enter the number of compartments.
438. ADDITIONAL DESCRIPTION - You may use this space to provide additional tank or location information.
439. TANK USE - Check the substance stored. If motor vehicle fuel, check box 1 and complete item 440, PETROLEUM TYPE.
440. PETROLEUM TYPE - If box 1 in item 439 is checked, indicate the specific type/grade of fuel stored.
441. COMMON NAME - For substances other than motor vehicle fuels, enter the common name of the substance stored.
442. CAS # - For substances other than motor vehicle fuels, enter the CAS (Chemical Abstract Service) number.
443. TYPE OF TANK - Check the type of tank construction. If type of tank is not listed, check "other" and specify type in the space provided.
444. TANK MATERIAL (PRIMARY TANK) - Check the material of construction of the inner tank (i.e. inner tank wall nearest the hazardous substance stored). If the tank is lined, describe the lining material in item 446, not in this section. If the tank material is not listed, check "other" and specify the material in the space provided.
445. TANK MATERIAL (SECONDARY TANK) - Check material of construction of the tank that provides containment external t and separate from, the primary containment described above. If the tank material is not listed, check "other" and specify the material in the space provided. If the tank is a single-wall tank, skip item 445.
446. TANK INTERIOR LINING OR COATING - Check the material of construction of any interior lining or coating in the tank. If unlined, check "unlined." If the type of interior lining or coating is not listed, check "other" and specify the lining material in the space provided.
447. DATE TANK INTERIOR LINING INSTALLED - If applicable, enter the date the tank interior lining was installed.
448. OTHER TANK CORROSION PROTECTION - If any other tank corrosion protection methods are used, check the appropriate boxes to describe them. If methods used are not listed, check "other" and describe in the space provided.
449. DATE TANK CORROSION PROTECTION INSTALLED - If applicable, enter the date tank corrosion protection was installed.
450. YEAR SPILL AND OVERFILL INSTALLED - Check the appropriate boxes to indicate whether drop tube(s), spill containment, and striker plate(s) are installed. In the spaces provided, specify the year each type of equipment was installed.
451. TYPE OF SPILL PROTECTION - Enter the type of spill containment, drop tube, and striker plate installed.
452. YEAR OVERFILL PROTECTION EQUIPMENT INSTALLED - Check the appropriate box(es) to describe the type(s) of overfill protection equipment installed. In the space provided, specify the year this equipment was installed.
453. TANK LEAK DETECTION (SINGLE WALL TANKS ONLY) - Check the leak detection system(s) used to comply with monitoring requirements for the tank itself. CHECK ALL THAT APPLY. If you use a leak detection system that is not listed, check "other" and describe the system in the space provided.
454. TANK LEAK DETECTION (DOUBLE WALL TANKS) - For double wall tanks, tanks in vaults, or tanks with a bladder, check the leak detection system(s) used to monitor the tank secondary containment system. CHECK ONE ITEM ONLY.
455. ESTIMATED DATE LAST USED - Complete this section only if the tank was closed in place. Enter the date the tank was last used.
456. ESTIMATED QUANTITY OF SUBSTANCE REMAINING IN TANK - Complete this section only if the tank was closed in place. Enter the estimated quantity of hazardous substance remaining in the tank (in gallons).
457. TANK FILLED WITH INERT MATERIAL - Complete this section only if the tank was closed in place. Check whether or not the tank was filled with an inert material prior to closure.

UNIFIED PROGRAM CONSOLIDATED FORM
TANKS

UNDERGROUND STORAGE TANKS – TANK PAGE 2

VI. PIPING CONSTRUCTION (Check all that apply)

	UNDERGROUND PIPING				ABOVEGROUND PIPING			
SYSTEM TYPE	☐ 1. PRESSURE	☐ 2. SUCTION	☐ 3. GRAVITY	458.	☐ 1. PRESSURE	☒ 2. SUCTION	☐ 3. GRAVITY	459.
CONSTRUCTION/ MANUFACTURER	☐ 1. SINGLE WALL	☐ 3. LINED TRENCH	☐ 99. OTHER	460.	☒ 1. SINGLE WALL	☐ 95. UNKNOWN		462.
	☐ 2. DOUBLE WALL	☐ 95. UNKNOWN			☐ 2. DOUBLE WALL	☐ 99. OTHER		
MANUFACTURER				461.	MANUFACTURER			463.
☐ 1. BARE STEEL	☐ 6. FRP COMPATIBLE W/100% METHANOL				☐ 1. BARE STEEL	☐ 6. FRP COMPATIBLE W/100% METHANOL		
☐ 2. STAINLESS STEEL	☐ 7. GALVANIZED STEEL				☐ 2. STAINLESS STEEL	☒ 7. GALVANIZED STEEL		
☐ 3. PLASTIC COMPATIBLE WITH CONTENTS	☐ 95. UNKNOWN				☐ 3. PLASTIC COMPATIBLE W/ CONTENTS	☐ 8. FLEXIBLE (HDPE)	☐ 99. OTHER	
☐ 4. FIBERGLASS	☐ 8. FLEXIBLE (HDPE)	☐ 99. OTHER			☐ 4. FIBERGLASS	☐ 9. CATHODIC PROTECTION		
☐ 5. STEEL W/COATING	☐ 9. CATHODIC PROTECTION			464.	☐ 5. STEEL W/COATING	☐ 95. UNKNOWN		465.

VII. PIPING LEAK DETECTION (Check all that apply) (A description of the monitoring program shall be submitted to the local agency.)

UNDERGROUND PIPING

SINGLE WALL PIPING 466.

PRESSURIZED PIPING (Check all that apply):

☐ 1. ELECTRONIC LINE LEAK DETECTOR 3.0 GPH TEST WITH AUTO PUMP SHUT-OFF FOR LEAK, SYSTEM FAILURE, AND SYSTEM DISCONNECTION + AUDIBLE AND VISUAL ALARMS.

☐ 2. MONTHLY 0.2 GPH TEST

☐ 3. ANNUAL INTEGRITY TEST (0.1 GPH)

CONVENTIONAL SUCTION SYSTEMS

☐ 5. DAILY VISUAL MONITORING OF PUMPING SYSTEM + TRIENNIAL PIPING INTEGRITY TEST (0.1 GPH)

SAFE SUCTION SYSTEMS (NO VALVES IN BELOW GROUND PIPING):

☐ 7. SELF MONITORING

GRAVITY FLOW

☐ 9. BIENNIAL INTEGRITY TEST (0.1 GPH)

SECONDARILY CONTAINED PIPING

PRESSURIZED PIPING (Check all that apply):

10. CONTINUOUS TURBINE SUMP SENSOR WITH AUDIBLE AND VISUAL ALARMS AND (Check one)
  - ☐ a. AUTO PUMP SHUT OFF WHEN A LEAK OCCURS
  - ☐ b. AUTO PUMP SHUT OFF FOR LEAKS, SYSTEM FAILURE AND SYSTEM DISCONNECTION
  - ☐ c. NO AUTO PUMP SHUT OFF

☐ 11. AUTOMATIC LINE LEAK DETECTOR (3.0 GPH TEST) WITH FLOW SHUT OFF OR RESTRICTION

☐ 12. ANNUAL INTEGRITY TEST (0.1 GPH)

SUCTION/GRAVITY SYSTEM

☐ 13. CONTINUOUS SUMP SENSOR + AUDIBLE AND VISUAL ALARMS

EMERGENCY GENERATORS ONLY (Check all that apply)

☐ 14. CONTINUOUS SUMP SENSOR WITHOUT AUTO PUMP SHUT OFF AUDIBLE AND VISUAL ALARMS

☐ 15. AUTOMATIC LINE LEAK DETECTOR (3.0 GPH TEST) WITHOUT FLOW SHUT OFF OR RESTRICTION

☐ 16. ANNUAL INTEGRITY TEST (0.1 GPH)

☐ 17. DAILY VISUAL CHECK

ABOVEGROUND PIPING

SINGLE WALL PIPING 467.

PRESSURIZED PIPING (Check all that apply):

☐ 1. ELECTRONIC LINE LEAK DETECTOR 3.0 GPH TEST WITH AUTO PUMP SHUT OFF FOR LEAK, SYSTEM FAILURE, AND SYSTEM DISCONNECTION + AUDIBLE AND VISUAL ALARMS.

☐ 2. MONTHLY 0.2 GPH TEST

☐ 3. ANNUAL INTEGRITY TEST (0.1 GPH)

☐ 4. DAILY VISUAL CHECK

CONVENTIONAL SUCTION SYSTEMS (Check all that apply)

☐ 5. DAILY VISUAL MONITORING OF PIPING AND PUMPING SYSTEM

☐ 6. TRIENNIAL INTEGRITY TEST (0.1 GPH)

SAFE SUCTION SYSTEMS (NO VALVES IN BELOW GROUND PIPING):

☐ 7. SELF MONITORING

GRAVITY FLOW (Check all that apply):

☐ 8. DAILY VISUAL MONITORING

☐ 9. BIENNIAL INTEGRITY TEST (0.1 GPH)

SECONDARILY CONTAINED PIPING

PRESSURIZED PIPING (Check all that apply):

10. CONTINUOUS TURBINE SUMP SENSOR WITH AUDIBLE AND VISUAL ALARMS AND (Check one)
  - ☐ a. AUTO PUMP SHUT OFF WHEN A LEAK OCCURS
  - ☐ b. AUTO PUMP SHUT OFF FOR LEAKS, SYSTEM FAILURE AND SYSTEM DISCONNECTION
  - ☐ c. NO AUTO PUMP SHUT OFF

☐ 11. AUTOMATIC LEAK DETECTOR

☐ 12. ANNUAL INTEGRITY TEST (0.1 GPH)

SUCTION/GRAVITY SYSTEM

☐ 13. CONTINUOUS SUMP SENSOR + AUDIBLE AND VISUAL ALARMS

EMERGENCY GENERATORS ONLY (Check all that apply)

☐ 14. CONTINUOUS SUMP SENSOR WITHOUT AUTO PUMP SHUT OFF AUDIBLE AND VISUAL ALARMS

☐ 15. AUTOMATIC LINE LEAK DETECTOR (3.0 GPH TEST)

☒ 16. ANNUAL INTEGRITY TEST (0.1 GPH)

☐ 17. DAILY VISUAL CHECK

VIII. DISPENSER CONTAINMENT

DISPENSER CONTAINMENT 468.

DATE INSTALLED

N/A

- ☐ 1. FLOAT MECHANISM THAT SHUTS OFF SHEAR VALVE
- ☐ 2. CONTINUOUS DISPENSER PAN SENSOR + AUDIBLE AND VISUAL ALARMS
- ☐ 3. CONTINUOUS DISPENSER PAN SENSOR WITH AUTO SHUT OFF FOR DISPENSER + AUDIBLE AND VISUAL ALARMS
- ☐ 4. DAILY VISUAL CHECK 469.
- ☐ 5. TRENCH/LINER MONITORING
- ☐ 6. NONE

IX. OWNER/OPERATOR SIGNATURE

I certify that the information provided herein is true and accurate to the best of my knowledge.

SIGNATURE OF OWNER/OPERATOR: [signature]

DATE: 2-28-2008

TK-1-55 470.

NAME OF OWNER/OPERATOR (print): David McGraw

TITLE OF OWNER/OPERATOR: Associate Lab Director / COO 472.

Permit Number (Agency use only) 473.	Permit Approved By (Agency use only) 474.	Permit Expiration Date (Agency use only) 475.

UST - Tank Form Page 2 Instructions
(Formerly SWRCB Permit Application Form B)

Please number all pages of your submittal.

458. PIPING SYSTEM TYPE (UNDERGROUND) -

459. PIPING SYSTEM TYPE (ABOVEGROUND) -

For items 458 and 459, check the appropriate boxes to describe the type of product/waste piping installed in this tank system. Describe underground and aboveground (if any) piping separately in the columns provided.

460. PIPING CONSTRUCTION (UNDERGROUND) - Check the appropriate box(es) to describe the type(s) of containment provided for the underground product/waste piping.

461. PIPING MANUFACTURER (UNDERGROUND) - Enter the name of the piping manufacturer.

462. PIPING CONSTRUCTION (ABOVEGROUND) - Check the appropriate box(es) to describe the type(s) of containment provided for any aboveground portions of the product/waste piping.

463. PIPING MANUFACTURER (ABOVEGROUND) - Enter the name of the piping manufacturer.

464. PIPING MATERIAL AND CORROSION PROTECTION (UNDERGROUND) - Check the appropriate boxes to describe the material(s) of construction of the primary (i.e. inner) underground product/waste piping and indicate whether any cathodic (i.e. corrosion) protection systems are installed.

465. PIPING MATERIAL AND CORROSION PROTECTION (ABOVEGROUND) - Check the appropriate boxes to describe the material(s) of construction of any primary (i.e. inner) aboveground product/waste piping and indicate whether any cathodic (i.e. corrosion) protection systems are installed.

466. PIPING LEAK DETECTION (UNDERGROUND) -

467. PIPING LEAK DETECTION (ABOVEGROUND)-

For items 466 and 467, check the appropriate boxes to describe all leak detection method(s) used to comply with the monitoring requirements for regulated piping.

468. DATE DISPENSER CONTAINMENT INSTALLED - If the tank system is equipped with dispenser secondary containment (i.e. dispenser sumps or pans) equipment, enter the date that equipment was installed. If the tank system has a dispenser that is not secondarily contained, specify "None" in the space provided for the date. If the system does not include dispensers (e.g. standby generator tank system), enter "N/A."

469. DISPENSER CONTAINMENT TYPE - Check the appropriate box to describe how dispenser secondary containment is monitored for leaks.

SIGNATURE OF OWNER/OPERATOR - The owner or an authorized agent of the owner shall sign in the space provided. This signature certifies that the signer believes that all information submitted is true, accurate, and complete.

470 DATE CERTIFIED - Enter the date the form was signed.

471. OWNER/ OPERATOR NAME - Print or type the name of the person signing the form.

472. OWNER/ OPERATOR TITLE - Enter the title of the person signing the form.

473. PERMIT NUMBER - This space is for agency use only.

474. PERMIT APPROVED BY - This space is for agency use only.

475. PERMIT EXPIRATION DATE - This space is for agency use only.

UNIFIED PROGRAM CONSOLIDATED FORM
TANKS

UNDERGROUND STORAGE TANKS – TANK PAGE 1

(Two pages per tank)

TYPE OF ACTION (Check one item only) ☐ 1. NEW PERMIT ☐ 4. AMENDED PERMIT ☐ 5. CHANGE OF INFORMATION (Specify reason) ☐ 6. TEMPORARY TANK CLOSURE ☒ 3. RENEWAL PERMIT (Specify reason) ☐ 7. PERMANENTLY CLOSED ON SITE ☐ 8. TANK REMOVED 430.

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As) 3.
Lawrence Berkeley National Laboratory

FACILITY ID: 1.

LOCATION WITHIN SITE (Optional) 431.
Building 76 - South side by Motor Pool offices

I. TANK DESCRIPTION

(A scaled plot plan with the location of the UST system including buildings and landmarks shall be submitted to the local agency.)

TANK ID # 432.	TANK MANUFACTURER 433.	COMPARTMENTALIZED TANK ☐ Yes ☒ No 434.
TK-5-76	Modern Welding	If "Yes," complete one page for each compartment.
DATE INSTALLED (YEAR/MO) 435.	TANK CAPACITY IN GALLONS 436.	NUMBER OF COMPARTMENTS 437.
December/1990	10,000	N/A

ADDITIONAL DESCRIPTION (For local use only) 438.

II. TANK CONTENTS

TANK USE 439.
☒ 1. MOTOR VEHICLE FUEL (If checked, complete Petroleum Type)
☐ 2. NON-FUEL PETROLEUM
☐ 3. CHEMICAL PRODUCT
☐ 4. HAZARDOUS WASTE (Includes Used Oil)
☐ 95. UNKNOWN

PETROLEUM TYPE 440.
☒ 1a. REGULAR UNLEADED ☐ 2. LEADED ☐ 5. JET FUEL
☐ 1b. PREMIUM UNLEADED ☐ 3. DIESEL ☐ 6. AVIATION GAS
☐ 1c. MIDGRADE UNLEADED ☐ 4. GASOHOL ☐ 99. OTHER: _____

COMMON NAME (from Hazardous Materials Inventory page) 441.
Gasoline

CAS# (from Hazardous Materials Inventory page) 442.
8006619

III. TANK CONSTRUCTION

TYPE OF TANK (Check one item only) 443.
☐ 1. SINGLE WALL ☐ 3. SINGLE WALL WITH EXTERIOR MEMBRANE LINER ☐ 5. SINGLE WALL WITH INTERNAL BLADDER SYSTEM ☐ 95. UNKNOWN
☒ 2. DOUBLE WALL ☐ 4. SINGLE WALL IN A VAULT ☐ 99. OTHER ____

TANK MATERIAL – primary tank (Check one item only) 444.
☐ 1. BARE STEEL ☐ 3. FIBERGLASS / PLASTIC ☐ 5. CONCRETE ☐ 95. UNKNOWN
☐ 2. STAINLESS STEEL ☒ 4. STEEL CLAD W/FIBERGLASS REINFORCED PLASTIC (FRP) ☐ 8. FRP COMPATIBLE W/100% METHANOL ☐ 99. OTHER: _____

TANK MATERIAL – secondary tank (Check one item only) 445.
☐ 1. BARE STEEL ☐ 3. FIBERGLASS / PLASTIC ☐ 8. FRP COMPTIBLE W/100% METHANOL ☐ 95. UNKNOWN
☐ 2. STAINLESS STEEL ☒ 4. STEEL CLAD W/FIBERGLASS REINFORCED PLASTIC (FRP) ☐ 9. FRP NON-CORRODABLE JACKET ☐ 99. OTHER _____
☐ 5. CONCRETE ☐ 10. COATED STEEL

TANK INTERIOR LINING OR COATING (Check one item only) 446.
☐ 1. RUBBER LINED ☐ 3. EPOXY LINING ☐ 5. GLASS LINING ☐ 95. UNKNOWN
☐ 2. ALKYD LINING ☐ 4. PHENOLIC LINING ☒ 6. UNLINED ☐ 99. OTHER _____
DATE INSTALLED 447.

OTHER CORROSION PROTECTION (If Applicable) 448.
☐ 1. MANUFACTURED CATHODIC PROTECTION ☒ 3. FIBERGLASS REINFORCED PLASTIC ☐ 95. UNKNOWN
☐ 2. SACRIFICIAL ANODE ☐ 4. IMPRESSED CURRENT ☐ 99. OTHER _____
DATE INSTALLED 449.

SPILL AND OVERFILL (Check all that apply) 450.
☒ 1. SPILL CONTAINMENT 1990
☒ 2. DROP TUBE 1990
☒ 3. STRIKER PLATE 1990

TYPE 451.
_____
_____
_____

OVERFILL PROTECTION EQUIPMENT: YEAR INSTALLED 452.
☒ 1. ALARM 1990 ☒ 3. FILL TUBE SHUT OFF VALVE 1990
☐ 2. BALL FLOAT ____ ☐ 4. EXEMPT

IV. TANK LEAK DETECTION

(A description of the monitoring program shall be submitted to the local agency.)

IF SINGLE WALL TANK (Check all that apply) 453.
☐ 1. VISUAL (EXPOSED PORTION ONLY)
☐ 2. AUTOMATIC TANK GAUGING (ATG)
☐ 3. CONTINUOUS ATG
☐ 4. STATISTICAL INVENTORY RECONCILIATION (SIR) + BIENNIAL TANK TESTING
☐ 5. MANUAL TANK GAUGING (MTG)
☐ 6. VADOSE ZONE
☐ 7. GROUNDWATER
☐ 8. TANK TESTING
☐ 99. OTHER _____

IF DOUBLE WALL TANK OR TANK WITH BLADDER (Check one item only) 454.
☐ 1. VISUAL (SINGLE WALL IN VAULT ONLY)
☒ 2. CONTINUOUS INTERSTITIAL MONITORING
☐ 3. MANUAL MONITORING

V. TANK CLOSURE INFORMATION / PERMANENT CLOSURE IN PLACE

ESTIMATED DATE LAST USED (YR/MO/DAY) 455.	ESTIMATED QUANTITY OF SUBSTANCE REMAINING 456.	TANK FILLED WITH INERT MATERIAL? 457.
	_____ gallons	☐ Yes ☐ No

UST - Tank Form Page 1 Instructions
(Formerly SWRCB Permit Application Form B)

Complete a separate form for each tank for all new permits, permit changes, or any facility information changes. This form must be submitted within 30 days of permit or facility information changes, unless your local agency requires approval prior to makir changes. For compartmentalized tanks, each compartment is considered a separate tank and requires completion of a separate tan.. form. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

1. FACILITY ID NUMBER - This space is for agency use only.
3. BUSINESS NAME - Enter the complete Facility Name.
430. TYPE OF ACTION - Check the reason why this form is being submitted. For amended permits and changes of information, include a brief statement summarizing the amendment or change.
431. LOCATION WITHIN SITE - You may use this space to describe the location of the tank within the facility.
432. TANK ID NUMBER - If the UST owner has assigned an in-house tank ID number to this tank, enter that number in this space.
433. TANK MANUFACTURER - Enter the name of the company that manufactured the tank.
434. COMPARTMENTALIZED TANK - Check the appropriate box to indicate whether or not the tank is compartmentalized. Each compartment is considered a separate tank.
435. DATE TANK INSTALLED - Enter the year and month the tank was installed.
436. TANK CAPACITY - Enter the tank capacity in gallons.
437. NUMBER OF TANK COMPARTMENTS - If the tank is compartmentalized, enter the number of compartments.
438. ADDITIONAL DESCRIPTION - You may use this space to provide additional tank or location information.
439. TANK USE - Check the substance stored. If motor vehicle fuel, check box 1 and complete item 440, PETROLEUM TYPE.
440. PETROLEUM TYPE - If box 1 in item 439 is checked, indicate the specific type/grade of fuel stored.
441. COMMON NAME - For substances other than motor vehicle fuels, enter the common name of the substance stored.
442. CAS # - For substances other than motor vehicle fuels, enter the CAS (Chemical Abstract Service) number.
443. TYPE OF TANK - Check the type of tank construction. If type of tank is not listed, check "other" and specify type in the space provided.
444. TANK MATERIAL (PRIMARY TANK) - Check the material of construction of the inner tank (i.e. inner tank wall nearest the hazardous substance stored). If the tank is lined, describe the lining material in item 446, not in this section. If the tank material is not listed, check "other" and specify the material in the space provided.
445. TANK MATERIAL (SECONDARY TANK) - Check material of construction of the tank that provides containment external t and separate from, the primary containment described above. If the tank material is not listed, check "other" and specify the material in the space provided. If the tank is a single-wall tank, skip item 445.
446. TANK INTERIOR LINING OR COATING - Check the material of construction of any interior lining or coating in the tank. If unlined, check "unlined." If the type of interior lining or coating is not listed, check "other" and specify the lining material in the space provided.
447. DATE TANK INTERIOR LINING INSTALLED - If applicable, enter the date the tank interior lining was installed.
448. OTHER TANK CORROSION PROTECTION - If any other tank corrosion protection methods are used, check the appropriate boxes to describe them. If methods used are not listed, check "other" and describe in the space provided.
449. DATE TANK CORROSION PROTECTION INSTALLED - If applicable, enter the date tank corrosion protection was installed.
450. YEAR SPILL AND OVERFILL INSTALLED - Check the appropriate boxes to indicate whether drop tube(s), spill containment, and striker plate(s) are installed. In the spaces provided, specify the year each type of equipment was installed.
451. TYPE OF SPILL PROTECTION - Enter the type of spill containment, drop tube, and striker plate installed.
452. YEAR OVERFILL PROTECTION EQUIPMENT INSTALLED - Check the appropriate box(es) to describe the type(s) of overfill protection equipment installed. In the space provided, specify the year this equipment was installed.
453. TANK LEAK DETECTION (SINGLE WALL TANKS ONLY) - Check the leak detection system(s) used to comply with monitoring requirements for the tank itself. CHECK ALL THAT APPLY. If you use a leak detection system that is not listed, check "other" and describe the system in the space provided.
454. TANK LEAK DETECTION (DOUBLE WALL TANKS) - For double wall tanks, tanks in vaults, or tanks with a bladder, check the leak detection system(s) used to monitor the tank secondary containment system. CHECK ONE ITEM ONLY.
455. ESTIMATED DATE LAST USED - Complete this section only if the tank was closed in place. Enter the date the tank was last used.
456. ESTIMATED QUANTITY OF SUBSTANCE REMAINING IN TANK - Complete this section only if the tank was closed in place. Enter the estimated quantity of hazardous substance remaining in the tank (in gallons).
457. TANK FILLED WITH INERT MATERIAL - Complete this section only if the tank was closed in place. Check whether or not the tank was filled with an inert material prior to closure.

UNIFIED PROGRAM CONSOLIDATED FORM
TANKS

UNDERGROUND STORAGE TANKS – TANK PAGE 2

VI. PIPING CONSTRUCTION (Check all that apply)

	UNDERGROUND PIPING				ABOVEGROUND PIPING			
SYSTEM TYPE	☒ 1. PRESSURE	☐ 2. SUCTION	☐ 3. GRAVITY	458.	☐ 1. PRESSURE	☐ 2. SUCTION	☐ 3. GRAVITY	459.
CONSTRUCTION/ MANUFACTURER	☐ 1. SINGLE WALL	☐ 3. LINED TRENCH	☐ 99. OTHER	460.	☐ 1. SINGLE WALL	☐ 95. UNKNOWN		462.
	☒ 2. DOUBLE WALL	☐ 95. UNKNOWN			☐ 2. DOUBLE WALL	☐ 99. OTHER		
	MANUFACTURER Ameron Dualoy			461.	MANUFACTURER			463.
	☐ 1. BARE STEEL	☐ 6. FRP COMPATIBLE W/100% METHANOL			☐ 1. BARE STEEL	☐ 6. FRP COMPATIBLE W/100% METHANOL		
	☐ 2. STAINLESS STEEL	☐ 7. GALVANIZED STEEL			☐ 2. STAINLESS STEEL	☐ 7. GALVANIZED STEEL		
	☐ 3. PLASTIC COMPATIBLE WITH CONTENTS	☐ 95. UNKNOWN			☐ 3. PLASTIC COMPATIBLE W/ CONTENTS	☐ 8. FLEXIBLE (HDPE)	☐ 99. OTHER	
	☒ 4. FIBERGLASS	☐ 8. FLEXIBLE (HDPE)	☐ 99. OTHER		☐ 4. FIBERGLASS	☐ 9. CATHODIC PROTECTION		
	☐ 5. STEEL W/COATING	☐ 9. CATHODIC PROTECTION		464.	☐ 5. STEEL W/COATING	☐ 95. UNKNOWN		465.

VII. PIPING LEAK DETECTION (Check all that apply) (A description of the monitoring program shall be submitted to the local agency.)

UNDERGROUND PIPING

SINGLE WALL PIPING 466.

PRESSURIZED PIPING (Check all that apply):

☐ 1. ELECTRONIC LINE LEAK DETECTOR 3.0 GPH TEST WITH AUTO PUMP SHUT-OFF FOR LEAK, SYSTEM FAILURE, AND SYSTEM DISCONNECTION + AUDIBLE AND VISUAL ALARMS.

☐ 2. MONTHLY 0.2 GPH TEST

☐ 3. ANNUAL INTEGRITY TEST (0.1 GPH)

CONVENTIONAL SUCTION SYSTEMS

☐ 5. DAILY VISUAL MONITORING OF PUMPING SYSTEM + TRIENNIAL PIPING INTEGRITY TEST (0.1 GPH)

SAFE SUCTION SYSTEMS (NO VALVES IN BELOW GROUND PIPING):

☐ 7. SELF MONITORING

GRAVITY FLOW

☐ 9. BIENNIAL INTEGRITY TEST (0.1 GPH)

SECONDARILY CONTAINED PIPING

PRESSURIZED PIPING (Check all that apply):

10. CONTINUOUS TURBINE SUMP SENSOR WITH AUDIBLE AND VISUAL ALARMS AND (Check one)
  - ☐ a. AUTO PUMP SHUT OFF WHEN A LEAK OCCURS
  - ☐ b. AUTO PUMP SHUT OFF FOR LEAKS, SYSTEM FAILURE AND SYSTEM DISCONNECTION
  - ☒ c. NO AUTO PUMP SHUT OFF

☒ 11. AUTOMATIC LINE LEAK DETECTOR (3.0 GPH TEST) WITH FLOW SHUT OFF OR RESTRICTION

☒ 12. ANNUAL INTEGRITY TEST (0.1 GPH)

SUCTION/GRAVITY SYSTEM

☐ 13. CONTINUOUS SUMP SENSOR + AUDIBLE AND VISUAL ALARMS

EMERGENCY GENERATORS ONLY (Check all that apply)

☐ 14. CONTINUOUS SUMP SENSOR WITHOUT AUTO PUMP SHUT OFF AUDIBLE AND VISUAL ALARMS

☐ 15. AUTOMATIC LINE LEAK DETECTOR (3.0 GPH TEST) WITHOUT FLOW SHUT OFF OR RESTRICTION

☐ 16. ANNUAL INTEGRITY TEST (0.1 GPH)

☐ 17. DAILY VISUAL CHECK

ABOVEGROUND PIPING

SINGLE WALL PIPING 467.

PRESSURIZED PIPING (Check all that apply):

☐ 1. ELECTRONIC LINE LEAK DETECTOR 3.0 GPH TEST WITH AUTO PUMP SHUT OFF FOR LEAK, SYSTEM FAILURE, AND SYSTEM DISCONNECTION + AUDIBLE AND VISUAL ALARMS.

☐ 2. MONTHLY 0.2 GPH TEST

☐ 3. ANNUAL INTEGRITY TEST (0.1 GPH)

☐ 4. DAILY VISUAL CHECK

CONVENTIONAL SUCTION SYSTEMS (Check all that apply)

☐ 5. DAILY VISUAL MONITORING OF PIPING AND PUMPING SYSTEM

☐ 6. TRIENNIAL INTEGRITY TEST (0.1 GPH)

SAFE SUCTION SYSTEMS (NO VALVES IN BELOW GROUND PIPING):

☐ 7. SELF MONITORING

GRAVITY FLOW (Check all that apply):

☐ 8. DAILY VISUAL MONITORING

☐ 9. BIENNIAL INTEGRITY TEST (0.1 GPH)

SECONDARILY CONTAINED PIPING

PRESSURIZED PIPING (Check all that apply):

10. CONTINUOUS TURBINE SUMP SENSOR WITH AUDIBLE AND VISUAL ALARMS AND (Check one)
  - ☐ a. AUTO PUMP SHUT OFF WHEN A LEAK OCCURS
  - ☐ b. AUTO PUMP SHUT OFF FOR LEAKS, SYSTEM FAILURE AND SYSTEM DISCONNECTION
  - ☐ c. NO AUTO PUMP SHUT OFF

☐ 11. AUTOMATIC LEAK DETECTOR

☐ 12. ANNUAL INTEGRITY TEST (0.1 GPH)

SUCTION/GRAVITY SYSTEM

☐ 13. CONTINUOUS SUMP SENSOR + AUDIBLE AND VISUAL ALARMS

EMERGENCY GENERATORS ONLY (Check all that apply)

☐ 14. CONTINUOUS SUMP SENSOR WITHOUT AUTO PUMP SHUT OFF AUDIBLE AND VISUAL ALARMS

☐ 15. AUTOMATIC LINE LEAK DETECTOR (3.0 GPH TEST)

☐ 16. ANNUAL INTEGRITY TEST (0.1 GPH)

☐ 17. DAILY VISUAL CHECK

VIII. DISPENSER CONTAINMENT

DISPENSER CONTAINMENT 468.			
DATE INSTALLED	☐ 1. FLOAT MECHANISM THAT SHUTS OFF SHEAR VALVE	☐ 4. DAILY VISUAL CHECK 469.	
1990 (containment)	☒ 2. CONTINUOUS DISPENSER PAN SENSOR + AUDIBLE AND VISUAL ALARMS	☐ 5. TRENCH/LINER MONITORING	
	☐ 3. CONTINUOUS DISPENSER PAN SENSOR WITH AUTO SHUT OFF FOR DISPENSER + AUDIBLE AND VISUAL ALARMS	☐ 6. NONE	

IX. OWNER/OPERATOR SIGNATURE

I certify that the information provided herein is true and accurate to the best of my knowledge.

SIGNATURE OF OWNER/OPERATOR	DATE: 7-28-2008	TK-5-76 470.
NAME OF OWNER/OPERATOR (print): David McGraw	TITLE OF OWNER/OPERATOR: Associate Lab Director / COO	472.

Permit Number (Agency use only) 473.	Permit Approved By (Agency use only) 474.	Permit Expiration Date (Agency use only) 475.

UST - Tank Form Page 2 Instructions
(Formerly SWRCB Permit Application Form B)

Please number all pages of your submittal.

458. PIPING SYSTEM TYPE (UNDERGROUND) -

459. PIPING SYSTEM TYPE (ABOVEGROUND) -

For items 458 and 459, check the appropriate boxes to describe the type of product/waste piping installed in this tank system. Describe underground and aboveground (if any) piping separately in the columns provided.

460. PIPING CONSTRUCTION (UNDERGROUND) - Check the appropriate box(es) to describe the type(s) of containment provided for the underground product/waste piping.

461. PIPING MANUFACTURER (UNDERGROUND) - Enter the name of the piping manufacturer.

462. PIPING CONSTRUCTION (ABOVEGROUND) - Check the appropriate box(es) to describe the type(s) of containment provided for any aboveground portions of the product/waste piping.

463. PIPING MANUFACTURER (ABOVEGROUND) - Enter the name of the piping manufacturer.

464. PIPING MATERIAL AND CORROSION PROTECTION (UNDERGROUND) - Check the appropriate boxes to describe the material(s) of construction of the primary (i.e. inner) underground product/waste piping and indicate whether any cathodic (i.e. corrosion) protection systems are installed.

465. PIPING MATERIAL AND CORROSION PROTECTION (ABOVEGROUND) - Check the appropriate boxes to describe the material(s) of construction of any primary (i.e. inner) aboveground product/waste piping and indicate whether any cathodic (i.e. corrosion) protection systems are installed.

466. PIPING LEAK DETECTION (UNDERGROUND) -

467. PIPING LEAK DETECTION (ABOVEGROUND)-

For items 466 and 467, check the appropriate boxes to describe all leak detection method(s) used to comply with the monitoring requirements for regulated piping.

468. DATE DISPENSER CONTAINMENT INSTALLED - If the tank system is equipped with dispenser secondary containment (i.e. dispenser sumps or pans) equipment, enter the date that equipment was installed. If the tank system has a dispenser that is not secondarily contained, specify "None" in the space provided for the date. If the system does not include dispensers (e.g. standby generator tank system), enter "N/A."

469. DISPENSER CONTAINMENT TYPE - Check the appropriate box to describe how dispenser secondary containment is monitored for leaks.

SIGNATURE OF OWNER/OPERATOR - The owner or an authorized agent of the owner shall sign in the space provided. This signature certifies that the signer believes that all information submitted is true, accurate, and complete.

470 DATE CERTIFIED - Enter the date the form was signed.

471. OWNER/ OPERATOR NAME - Print or type the name of the person signing the form.

472. OWNER/ OPERATOR TITLE - Enter the title of the person signing the form.

473. PERMIT NUMBER - This space is for agency use only.

474. PERMIT APPROVED BY - This space is for agency use only.

475. PERMIT EXPIRATION DATE - This space is for agency use only.

UNIFIED PROGRAM CONSOLIDATED FORM
TANKS

UNDERGROUND STORAGE TANKS – TANK PAGE 1

(Two pages per tank)

TYPE OF ACTION (Check one item only) ☐ 1. NEW PERMIT ☐ 4. AMENDED PERMIT ☐ 5. CHANGE OF INFORMATION (Specify reason) ☐ 6. TEMPORARY TANK CLOSURE ☒ 3. RENEWAL PERMIT (Specify reason) ☐ 7. PERMANENTLY CLOSED ON SITE ☐ 8. TANK REMOVED 430.

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As) 3.
Lawrence Berkeley National Laboratory

FACILITY ID: 1.

LOCATION WITHIN SITE (Optional) 431.
Building 76 - South side by Motor Pool offices

I. TANK DESCRIPTION

(A scaled plot plan with the location of the UST system including buildings and landmarks shall be submitted to the local agency.)

TANK ID # 432.	TANK MANUFACTURER 433.	COMPARTMENTALIZED TANK ☐ Yes ☒ No 434.
TK-6-76	Modern Welding	If "Yes," complete one page for each compartment.
DATE INSTALLED (YEAR/MO) 435.	TANK CAPACITY IN GALLONS 436.	NUMBER OF COMPARTMENTS 437.
December/1990	10,000	N/A

ADDITIONAL DESCRIPTION (For local use only) 438.

II. TANK CONTENTS

TANK USE 439.
☒ 1. MOTOR VEHICLE FUEL (If checked, complete Petroleum Type)
☐ 2. NON-FUEL PETROLEUM
☐ 3. CHEMICAL PRODUCT
☐ 4. HAZARDOUS WASTE (Includes Used Oil)
☐ 95. UNKNOWN

PETROLEUM TYPE 440.
☐ 1a. REGULAR UNLEADED ☐ 2. LEADED ☐ 5. JET FUEL
☐ 1b. PREMIUM UNLEADED ☒ 3. DIESEL ☐ 6. AVIATION GAS
☐ 1c. MIDGRADE UNLEADED ☐ 4. GASOHOL ☐ 99. OTHER: _____

COMMON NAME (from Hazardous Materials Inventory page) 441.	CAS# (from Hazardous Materials Inventory page) 442.
Diesel #2	68476346

III. TANK CONSTRUCTION

TYPE OF TANK (Check one item only) ☐ 1. SINGLE WALL ☐ 2. DOUBLE WALL ☐ 3. SINGLE WALL WITH EXTERIOR MEMBRANE LINER ☐ 4. SINGLE WALL IN A VAULT ☐ 5. SINGLE WALL WITH INTERNAL BLADDER SYSTEM ☐ 95. UNKNOWN ☐ 99. OTHER ____ 443.

TANK MATERIAL – primary tank (Check one item only) ☐ 1. BARE STEEL ☐ 2. STAINLESS STEEL ☐ 3. FIBERGLASS / PLASTIC ☒ 4. STEEL CLAD W/FIBERGLASS REINFORCED PLASTIC (FRP) ☐ 5. CONCRETE ☐ 8. FRP COMPATIBLE W/100% METHANOL ☐ 95. UNKNOWN ☐ 99. OTHER: _____ 444.

TANK MATERIAL – secondary tank (Check one item only) ☐ 1. BARE STEEL ☐ 2. STAINLESS STEEL ☒ 4. STEEL CLAD W/FIBERGLASS REINFORCED PLASTIC (FRP) ☐ 5. CONCRETE ☐ 8. FRP COMPTIBLE W/100% METHANOL ☐ 9. FRP NON-CORRODABLE JACKET ☐ 10. COATED STEEL ☐ 95. UNKNOWN ☐ 99. OTHER _____ 445.

TANK INTERIOR LINING OR COATING (Check one item only) ☐ 1. RUBBER LINED ☐ 2. ALKYD LINING ☐ 3. EPOXY LINING ☐ 4. PHENOLIC LINING ☐ 5. GLASS LINING ☒ 6. UNLINED ☐ 95. UNKNOWN ☐ 99. OTHER _____ 446. DATE INSTALLED 447.

OTHER CORROSION PROTECTION (If Applicable) ☐ 1. MANUFACTURED CATHODIC PROTECTION ☐ 2. SACRIFICIAL ANODE ☒ 3. FIBERGLASS REINFORCED PLASTIC ☐ 4. IMPRESSED CURRENT ☐ 95. UNKNOWN ☐ 99. OTHER _____ 448. DATE INSTALLED 449.

SPILL AND OVERFILL (Check all that apply) YEAR INSTALLED 450.
☒ 1. SPILL CONTAINMENT 1990
☒ 2. DROP TUBE 1990
☒ 3. STRIKER PLATE 1990

TYPE 451.

OVERFILL PROTECTION EQUIPMENT: YEAR INSTALLED 452.
☒ 1. ALARM 1990 ☒ 3. FILL TUBE SHUT OFF VALVE 1990
☐ 2. BALL FLOAT ____ ☐ 4. EXEMPT

IV. TANK LEAK DETECTION

(A description of the monitoring program shall be submitted to the local agency.)

IF SINGLE WALL TANK (Check all that apply) 453.
☐ 1. VISUAL (EXPOSED PORTION ONLY)
☐ 2. AUTOMATIC TANK GAUGING (ATG)
☐ 3. CONTINUOUS ATG
☐ 4. STATISTICAL INVENTORY RECONCILIATION (SIR) + BIENNIAL TANK TESTING
☐ 5. MANUAL TANK GAUGING (MTG)
☐ 6. VADOSE ZONE
☐ 7. GROUNDWATER
☐ 8. TANK TESTING
☐ 99. OTHER _____

IF DOUBLE WALL TANK OR TANK WITH BLADDER (Check one item only) 454.
☐ 1. VISUAL (SINGLE WALL IN VAULT ONLY)
☒ 2. CONTINUOUS INTERSTITIAL MONITORING
☐ 3. MANUAL MONITORING

V. TANK CLOSURE INFORMATION / PERMANENT CLOSURE IN PLACE

ESTIMATED DATE LAST USED (YR/MO/DAY) 455.	ESTIMATED QUANTITY OF SUBSTANCE REMAINING 456.	TANK FILLED WITH INERT MATERIAL? 457.
	_____ gallons	☐ Yes ☐ No

UST - Tank Form Page 1 Instructions
(Formerly SWRCB Permit Application Form B)

Complete a separate form for each tank for all new permits, permit changes, or any facility information changes. This form must be submitted within 30 days of permit or facility information changes, unless your local agency requires approval prior to maki changes. For compartmentalized tanks, each compartment is considered a separate tank and requires completion of a separate tan form. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

1. FACILITY ID NUMBER - This space is for agency use only.
3. BUSINESS NAME - Enter the complete Facility Name.
430. TYPE OF ACTION - Check the reason why this form is being submitted. For amended permits and changes of information, include a brief statement summarizing the amendment or change.
431. LOCATION WITHIN SITE - You may use this space to describe the location of the tank within the facility.
432. TANK ID NUMBER - If the UST owner has assigned an in-house tank ID number to this tank, enter that number in this space.
433. TANK MANUFACTURER - Enter the name of the company that manufactured the tank.
434. COMPARTMENTALIZED TANK - Check the appropriate box to indicate whether or not the tank is compartmentalized. Each compartment is considered a separate tank.
435. DATE TANK INSTALLED - Enter the year and month the tank was installed.
436. TANK CAPACITY - Enter the tank capacity in gallons.
437. NUMBER OF TANK COMPARTMENTS - If the tank is compartmentalized, enter the number of compartments.
438. ADDITIONAL DESCRIPTION - You may use this space to provide additional tank or location information.
439. TANK USE - Check the substance stored. If motor vehicle fuel, check box 1 and complete item 440, PETROLEUM TYPE.
440. PETROLEUM TYPE - If box 1 in item 439 is checked, indicate the specific type/grade of fuel stored.
441. COMMON NAME - For substances other than motor vehicle fuels, enter the common name of the substance stored.
442. CAS # - For substances other than motor vehicle fuels, enter the CAS (Chemical Abstract Service) number.
443. TYPE OF TANK - Check the type of tank construction. If type of tank is not listed, check "other" and specify type in the space provided.
444. TANK MATERIAL (PRIMARY TANK) - Check the material of construction of the inner tank (i.e. inner tank wall nearest the hazardous substance stored). If the tank is lined, describe the lining material in item 446, not in this section. If the tank material is not listed, check "other" and specify the material in the space provided.
445. TANK MATERIAL (SECONDARY TANK) - Check material of construction of the tank that provides containment external t and separate from, the primary containment described above. If the tank material is not listed, check "other" and specify the material in the space provided. If the tank is a single-wall tank, skip item 445.
446. TANK INTERIOR LINING OR COATING - Check the material of construction of any interior lining or coating in the tank. If unlined, check "unlined." If the type of interior lining or coating is not listed, check "other" and specify the lining material in the space provided.
447. DATE TANK INTERIOR LINING INSTALLED - If applicable, enter the date the tank interior lining was installed.
448. OTHER TANK CORROSION PROTECTION - If any other tank corrosion protection methods are used, check the appropriate boxes to describe them. If methods used are not listed, check "other" and describe in the space provided.
449. DATE TANK CORROSION PROTECTION INSTALLED - If applicable, enter the date tank corrosion protection was installed.
450. YEAR SPILL AND OVERFILL INSTALLED - Check the appropriate boxes to indicate whether drop tube(s), spill containment, and striker plate(s) are installed. In the spaces provided, specify the year each type of equipment was installed.
451. TYPE OF SPILL PROTECTION - Enter the type of spill containment, drop tube, and striker plate installed.
452. YEAR OVERFILL PROTECTION EQUIPMENT INSTALLED - Check the appropriate box(es) to describe the type(s) of overfill protection equipment installed. In the space provided, specify the year this equipment was installed.
453. TANK LEAK DETECTION (SINGLE WALL TANKS ONLY) - Check the leak detection system(s) used to comply with monitoring requirements for the tank itself. CHECK ALL THAT APPLY. If you use a leak detection system that is not listed, check "other" and describe the system in the space provided.
454. TANK LEAK DETECTION (DOUBLE WALL TANKS) - For double wall tanks, tanks in vaults, or tanks with a bladder, check the leak detection system(s) used to monitor the tank secondary containment system. CHECK ONE ITEM ONLY.
455. ESTIMATED DATE LAST USED - Complete this section only if the tank was closed in place. Enter the date the tank was last used.
456. ESTIMATED QUANTITY OF SUBSTANCE REMAINING IN TANK - Complete this section only if the tank was closed in place. Enter the estimated quantity of hazardous substance remaining in the tank (in gallons).
457. TANK FILLED WITH INERT MATERIAL - Complete this section only if the tank was closed in place. Check whether or not the tank was filled with an inert material prior to closure.

UNIFIED PROGRAM CONSOLIDATED FORM
TANKS

UNDERGROUND STORAGE TANKS – TANK PAGE 2

VI. PIPING CONSTRUCTION (Check all that apply)

	UNDERGROUND PIPING				ABOVEGROUND PIPING			
SYSTEM TYPE	☒ 1. PRESSURE	☐ 2. SUCTION	☐ 3. GRAVITY	458.	☐ 1. PRESSURE	☐ 2. SUCTION	☐ 3. GRAVITY	459.
CONSTRUCTION/ MANUFACTURER	☐ 1. SINGLE WALL	☐ 3. LINED TRENCH	☐ 99. OTHER	460.	☐ 1. SINGLE WALL	☐ 95. UNKNOWN		462.
	☒ 2. DOUBLE WALL	☐ 95. UNKNOWN			☐ 2. DOUBLE WALL	☐ 99. OTHER		
	MANUFACTURER Ameron Dualoy			461.	MANUFACTURER			463.
	☐ 1. BARE STEEL	☐ 6. FRP COMPATIBLE W/100% METHANOL			☐ 1. BARE STEEL	☐ 6. FRP COMPATIBLE W/100% METHANOL		
	☐ 2. STAINLESS STEEL	☐ 7. GALVANIZED STEEL			☐ 2. STAINLESS STEEL	☐ 7. GALVANIZED STEEL		
	☐ 3. PLASTIC COMPATIBLE WITH CONTENTS	☐ 95. UNKNOWN			☐ 3. PLASTIC COMPATIBLE W/ CONTENTS	☐ 8. FLEXIBLE (HDPE)	☐ 99. OTHER	
	☒ 4. FIBERGLASS	☐ 8. FLEXIBLE (HDPE)	☐ 99. OTHER		☐ 4. FIBERGLASS	☐ 9. CATHODIC PROTECTION		
	☐ 5. STEEL W/COATING	☐ 9. CATHODIC PROTECTION		464.	☐ 5. STEEL W/COATING	☐ 95. UNKNOWN		465.

VII. PIPING LEAK DETECTION (Check all that apply) (A description of the monitoring program shall be submitted to the local agency.)

UNDERGROUND PIPING

SINGLE WALL PIPING 466.

PRESSURIZED PIPING (Check all that apply):

- ☐ 1. ELECTRONIC LINE LEAK DETECTOR 3.0 GPH TEST WITH AUTO PUMP SHUT-OFF FOR LEAK, SYSTEM FAILURE, AND SYSTEM DISCONNECTION + AUDIBLE AND VISUAL ALARMS.
- ☐ 2. MONTHLY 0.2 GPH TEST
- ☐ 3. ANNUAL INTEGRITY TEST (0.1 GPH)

CONVENTIONAL SUCTION SYSTEMS

- ☐ 5. DAILY VISUAL MONITORING OF PUMPING SYSTEM + TRIENNIAL PIPING INTEGRITY TEST (0.1 GPH)

SAFE SUCTION SYSTEMS (NO VALVES IN BELOW GROUND PIPING):

- ☐ 7. SELF MONITORING

GRAVITY FLOW

- ☐ 9. BIENNIAL INTEGRITY TEST (0.1 GPH)

SECONDARILY CONTAINED PIPING

PRESSURIZED PIPING (Check all that apply):

- 10. CONTINUOUS TURBINE SUMP SENSOR WITH AUDIBLE AND VISUAL ALARMS AND (Check one)
  - ☐ a. AUTO PUMP SHUT OFF WHEN A LEAK OCCURS
  - ☐ b. AUTO PUMP SHUT OFF FOR LEAKS, SYSTEM FAILURE AND SYSTEM DISCONNECTION
  - ☒ c. NO AUTO PUMP SHUT OFF
- ☒ 11. AUTOMATIC LINE LEAK DETECTOR (3.0 GPH TEST) WITH FLOW SHUT OFF OR RESTRICTION
- ☒ 12. ANNUAL INTEGRITY TEST (0.1 GPH)

SUCTION/GRAVITY SYSTEM

- ☐ 13. CONTINUOUS SUMP SENSOR + AUDIBLE AND VISUAL ALARMS

EMERGENCY GENERATORS ONLY (Check all that apply)

- ☐ 14. CONTINUOUS SUMP SENSOR WITHOUT AUTO PUMP SHUT OFF AUDIBLE AND VISUAL ALARMS
- ☐ 15. AUTOMATIC LINE LEAK DETECTOR (3.0 GPH TEST) WITHOUT FLOW SHUT OFF OR RESTRICTION
- ☐ 16. ANNUAL INTEGRITY TEST (0.1 GPH)
- ☐ 17. DAILY VISUAL CHECK

ABOVEGROUND PIPING

SINGLE WALL PIPING 467.

PRESSURIZED PIPING (Check all that apply):

- ☐ 1. ELECTRONIC LINE LEAK DETECTOR 3.0 GPH TEST WITH AUTO PUMP SHUT OFF FOR LEAK, SYSTEM FAILURE, AND SYSTEM DISCONNECTION + AUDIBLE AND VISUAL ALARMS.
- ☐ 2. MONTHLY 0.2 GPH TEST
- ☐ 3. ANNUAL INTEGRITY TEST (0.1 GPH)
- ☐ 4. DAILY VISUAL CHECK

CONVENTIONAL SUCTION SYSTEMS (Check all that apply)

- ☐ 5. DAILY VISUAL MONITORING OF PIPING AND PUMPING SYSTEM
- ☐ 6. TRIENNIAL INTEGRITY TEST (0.1 GPH)

SAFE SUCTION SYSTEMS (NO VALVES IN BELOW GROUND PIPING):

- ☐ 7. SELF MONITORING

GRAVITY FLOW (Check all that apply):

- ☐ 8. DAILY VISUAL MONITORING
- ☐ 9. BIENNIAL INTEGRITY TEST (0.1 GPH)

SECONDARILY CONTAINED PIPING

PRESSURIZED PIPING (Check all that apply):

- 10. CONTINUOUS TURBINE SUMP SENSOR WITH AUDIBLE AND VISUAL ALARMS AND (Check one)
  - ☐ a. AUTO PUMP SHUT OFF WHEN A LEAK OCCURS
  - ☐ b. AUTO PUMP SHUT OFF FOR LEAKS, SYSTEM FAILURE AND SYSTEM DISCONNECTION
  - ☐ c. NO AUTO PUMP SHUT OFF
- ☐ 11. AUTOMATIC LEAK DETECTOR
- ☐ 12. ANNUAL INTEGRITY TEST (0.1 GPH)

SUCTION/GRAVITY SYSTEM

- ☐ 13. CONTINUOUS SUMP SENSOR + AUDIBLE AND VISUAL ALARMS

EMERGENCY GENERATORS ONLY (Check all that apply)

- ☐ 14. CONTINUOUS SUMP SENSOR WITHOUT AUTO PUMP SHUT OFF AUDIBLE AND VISUAL ALARMS
- ☐ 15. AUTOMATIC LINE LEAK DETECTOR (3.0 GPH TEST)
- ☐ 16. ANNUAL INTEGRITY TEST (0.1 GPH)
- ☐ 17. DAILY VISUAL CHECK

VIII. DISPENSER CONTAINMENT

DISPENSER CONTAINMENT 468.

DATE INSTALLED

1990 (containment)

- ☐ 1. FLOAT MECHANISM THAT SHUTS OFF SHEAR VALVE
- ☒ 2. CONTINUOUS DISPENSER PAN SENSOR + AUDIBLE AND VISUAL ALARMS
- ☐ 3. CONTINUOUS DISPENSER PAN SENSOR WITH AUTO SHUT OFF FOR DISPENSER + AUDIBLE AND VISUAL ALARMS
- ☐ 4. DAILY VISUAL CHECK 469.
- ☐ 5. TRENCH/LINER MONITORING
- ☐ 6. NONE

IX. OWNER/OPERATOR SIGNATURE

I certify that the information provided herein is true and accurate to the best of my knowledge.

SIGNATURE OF OWNER/OPERATOR [signature]

DATE: 2.20.2009

TK-6-76 470.

NAME OF OWNER/OPERATOR (print): David McGraw

TITLE OF OWNER/OPERATOR: Associate Lab Director / COO 472.

Permit Number (Agency use only) 473.	Permit Approved By (Agency use only) 474.	Permit Expiration Date (Agency use only) 475.

UST - Tank Form Page 2 Instructions
(Formerly SWRCB Permit Application Form B)

Please number all pages of your submittal.

458. PIPING SYSTEM TYPE (UNDERGROUND) -

459. PIPING SYSTEM TYPE (ABOVEGROUND) -

For items 458 and 459, check the appropriate boxes to describe the type of product/waste piping installed in this tank system. Describe underground and aboveground (if any) piping separately in the columns provided.

460. PIPING CONSTRUCTION (UNDERGROUND) - Check the appropriate box(es) to describe the type(s) of containment provided for the underground product/waste piping.

461. PIPING MANUFACTURER (UNDERGROUND) - Enter the name of the piping manufacturer.

462. PIPING CONSTRUCTION (ABOVEGROUND) - Check the appropriate box(es) to describe the type(s) of containment provided for any aboveground portions of the product/waste piping.

463. PIPING MANUFACTURER (ABOVEGROUND) - Enter the name of the piping manufacturer.

464. PIPING MATERIAL AND CORROSION PROTECTION (UNDERGROUND) - Check the appropriate boxes to describe the material(s) of construction of the primary (i.e. inner) underground product/waste piping and indicate whether any cathodic (i.e. corrosion) protection systems are installed.

465. PIPING MATERIAL AND CORROSION PROTECTION (ABOVEGROUND) - Check the appropriate boxes to describe the material(s) of construction of any primary (i.e. inner) aboveground product/waste piping and indicate whether any cathodic (i.e. corrosion) protection systems are installed.

466. PIPING LEAK DETECTION (UNDERGROUND) -

467. PIPING LEAK DETECTION (ABOVEGROUND)-

For items 466 and 467, check the appropriate boxes to describe all leak detection method(s) used to comply with the monitoring requirements for regulated piping.

468. DATE DISPENSER CONTAINMENT INSTALLED - If the tank system is equipped with dispenser secondary containment (i.e. dispenser sumps or pans) equipment, enter the date that equipment was installed. If the tank system has a dispenser that is not secondarily contained, specify "None" in the space provided for the date. If the system does not include dispensers (e.g. standby generator tank system), enter "N/A."

469. DISPENSER CONTAINMENT TYPE - Check the appropriate box to describe how dispenser secondary containment is monitored for leaks.

SIGNATURE OF OWNER/OPERATOR - The owner or an authorized agent of the owner shall sign in the space provided. This signature certifies that the signer believes that all information submitted is true, accurate, and complete.

470 DATE CERTIFIED - Enter the date the form was signed.

471. OWNER/ OPERATOR NAME - Print or type the name of the person signing the form.

472. OWNER/ OPERATOR TITLE - Enter the title of the person signing the form.

473. PERMIT NUMBER - This space is for agency use only.

474. PERMIT APPROVED BY - This space is for agency use only.

475. PERMIT EXPIRATION DATE - This space is for agency use only.

UNIFIED PROGRAM CONSOLIDATED FORM
TANKS
UNDERGROUND STORAGE TANKS – TANK PAGE 1

(Two pages per tank)

TYPE OF ACTION (Check one item only) ☐ 1. NEW PERMIT ☐ 4. AMENDED PERMIT ☐ 5. CHANGE OF INFORMATION ☐ 6. TEMPORARY TANK CLOSURE ☒ 3. RENEWAL PERMIT ☐ 7. PERMANENTLY CLOSED ON SITE ☐ 8. TANK REMOVED 430.
(Specify reason) (Specify reason)

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As) 3.
Lawrence Berkeley National Laboratory

FACILITY ID: 1.

LOCATION WITHIN SITE (Optional) 431.
Building 85 - East side

I. TANK DESCRIPTION

(A scaled plot plan with the location of the UST system including buildings and landmarks shall be submitted to the local agency.)

TANK ID # 432.	TANK MANUFACTURER 433.	COMPARTMENTALIZED TANK ☐ Yes ☒ No 434.
TK-1-85	Fluid Containment	If "Yes," complete one page for each compartment.
DATE INSTALLED (YEAR/MO) 435.	TANK CAPACITY IN GALLONS 436.	NUMBER OF COMPARTMENTS 437.
1995/August	2,500	N/A

ADDITIONAL DESCRIPTION (For local use only) 438.

II. TANK CONTENTS

TANK USE 439.
☐ 1. MOTOR VEHICLE FUEL (If checked, complete Petroleum Type)
☒ 2. NON-FUEL PETROLEUM
☐ 3. CHEMICAL PRODUCT
☐ 4. HAZARDOUS WASTE (Includes Used Oil)
☐ 95. UNKNOWN

PETROLEUM TYPE 440.
☐ 1a. REGULAR UNLEADED ☐ 2. LEADED ☐ 5. JET FUEL
☐ 1b. PREMIUM UNLEADED ☒ 3. DIESEL ☐ 6. AVIATION GAS
☐ 1c. MIDGRADE UNLEADED ☐ 4. GASOHOL ☐ 99. OTHER: _____

COMMON NAME (from Hazardous Materials Inventory page) 441.	CAS# (from Hazardous Materials Inventory page) 442.
Diesel #2	68476346

III. TANK CONSTRUCTION

TYPE OF TANK (Check one item only) 443.
☐ 1. SINGLE WALL ☐ 3. SINGLE WALL WITH EXTERIOR MEMBRANE LINER ☐ 5. SINGLE WALL WITH INTERNAL BLADDER SYSTEM ☐ 95. UNKNOWN
☒ 2. DOUBLE WALL ☐ 4. SINGLE WALL IN A VAULT ☐ 99. OTHER ____

TANK MATERIAL – primary tank (Check one item only) 444.
☐ 1. BARE STEEL ☒ 3. FIBERGLASS / PLASTIC ☐ 5. CONCRETE ☐ 95. UNKNOWN
☐ 2. STAINLESS STEEL ☐ 4. STEEL CLAD W/FIBERGLASS REINFORCED PLASTIC (FRP) ☐ 8. FRP COMPATIBLE W/100% METHANOL ☐ 99. OTHER: _____

TANK MATERIAL – secondary tank (Check one item only) 445.
☐ 1. BARE STEEL ☒ 3. FIBERGLASS / PLASTIC ☐ 8. FRP COMPTIBLE W/100% METHANOL ☐ 95. UNKNOWN
☐ 2. STAINLESS STEEL ☐ 4. STEEL CLAD W/FIBERGLASS REINFORCED PLASTIC (FRP) ☐ 9. FRP NON-CORRODABLE JACKET ☐ 99. OTHER _____
☐ 5. CONCRETE ☐ 10. COATED STEEL

TANK INTERIOR LINING OR COATING (Check one item only) 446.
☐ 1. RUBBER LINED ☐ 3. EPOXY LINING ☐ 5. GLASS LINING ☐ 95. UNKNOWN
☐ 2. ALKYD LINING ☐ 4. PHENOLIC LINING ☒ 6. UNLINED ☐ 99. OTHER _____
DATE INSTALLED 447.

OTHER CORROSION PROTECTION (If Applicable) 448.
☐ 1. MANUFACTURED CATHODIC PROTECTION ☒ 3. FIBERGLASS REINFORCED PLASTIC ☐ 95. UNKNOWN
☐ 2. SACRIFICIAL ANODE ☐ 4. IMPRESSED CURRENT ☐ 99. OTHER _____
DATE INSTALLED 449.

SPILL AND OVERFILL (Check all that apply) 450.
YEAR INSTALLED
☒ 1. SPILL CONTAINMENT 1995
☒ 2. DROP TUBE 1995
☒ 3. STRIKER PLATE 1995

TYPE 451.

OVERFILL PROTECTION EQUIPMENT: YEAR INSTALLED 452.
☒ 1. ALARM 1995 ☒ 3. FILL TUBE SHUT OFF VALVE 1995
☐ 2. BALL FLOAT ____ ☐ 4. EXEMPT

IV. TANK LEAK DETECTION

(A description of the monitoring program shall be submitted to the local agency.)

IF SINGLE WALL TANK (Check all that apply) 453.
☐ 1. VISUAL (EXPOSED PORTION ONLY)
☐ 2. AUTOMATIC TANK GAUGING (ATG)
☐ 3. CONTINUOUS ATG
☐ 4. STATISTICAL INVENTORY RECONCILIATION (SIR) + BIENNIAL TANK TESTING
☐ 5. MANUAL TANK GAUGING (MTG)
☐ 6. VADOSE ZONE
☐ 7. GROUNDWATER
☐ 8. TANK TESTING
☐ 99. OTHER _____

IF DOUBLE WALL TANK OR TANK WITH BLADDER (Check one item only) 454.
☐ 1. VISUAL (SINGLE WALL IN VAULT ONLY)
☒ 2. CONTINUOUS INTERSTITIAL MONITORING
☐ 3. MANUAL MONITORING

V. TANK CLOSURE INFORMATION / PERMANENT CLOSURE IN PLACE

ESTIMATED DATE LAST USED (YR/MO/DAY) 455.	ESTIMATED QUANTITY OF SUBSTANCE REMAINING 456.	TANK FILLED WITH INERT MATERIAL? 457.
	_____ gallons	☐ Yes ☐ No

UST - Tank Form Page 1 Instructions
(Formerly SWRCB Permit Application Form B)

Complete a separate form for each tank for all new permits, permit changes, or any facility information changes. This form must be submitted within 30 days of permit or facility information changes, unless your local agency requires approval prior to maki changes. For compartmentalized tanks, each compartment is considered a separate tank and requires completion of a separate tan form. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

1. FACILITY ID NUMBER - This space is for agency use only.
3. BUSINESS NAME - Enter the complete Facility Name.
430. TYPE OF ACTION - Check the reason why this form is being submitted. For amended permits and changes of information, include a brief statement summarizing the amendment or change.
431. LOCATION WITHIN SITE - You may use this space to describe the location of the tank within the facility.
432. TANK ID NUMBER - If the UST owner has assigned an in-house tank ID number to this tank, enter that number in this space.
433. TANK MANUFACTURER - Enter the name of the company that manufactured the tank.
434. COMPARTMENTALIZED TANK - Check the appropriate box to indicate whether or not the tank is compartmentalized. Each compartment is considered a separate tank.
435. DATE TANK INSTALLED - Enter the year and month the tank was installed.
436. TANK CAPACITY - Enter the tank capacity in gallons.
437. NUMBER OF TANK COMPARTMENTS - If the tank is compartmentalized, enter the number of compartments.
438. ADDITIONAL DESCRIPTION - You may use this space to provide additional tank or location information.
439. TANK USE - Check the substance stored. If motor vehicle fuel, check box 1 and complete item 440, PETROLEUM TYPE.
440. PETROLEUM TYPE - If box 1 in item 439 is checked, indicate the specific type/grade of fuel stored.
441. COMMON NAME - For substances other than motor vehicle fuels, enter the common name of the substance stored.
442. CAS # - For substances other than motor vehicle fuels, enter the CAS (Chemical Abstract Service) number.
443. TYPE OF TANK - Check the type of tank construction. If type of tank is not listed, check "other" and specify type in the space provided.
444. TANK MATERIAL (PRIMARY TANK) - Check the material of construction of the inner tank (i.e. inner tank wall nearest the hazardous substance stored). If the tank is lined, describe the lining material in item 446, not in this section. If the tank material is not listed, check "other" and specify the material in the space provided.
445. TANK MATERIAL (SECONDARY TANK) - Check material of construction of the tank that provides containment external t and separate from, the primary containment described above. If the tank material is not listed, check "other" and specify the material in the space provided. If the tank is a single-wall tank, skip item 445.
446. TANK INTERIOR LINING OR COATING - Check the material of construction of any interior lining or coating in the tank. If unlined, check "unlined." If the type of interior lining or coating is not listed, check "other" and specify the lining material in the space provided.
447. DATE TANK INTERIOR LINING INSTALLED - If applicable, enter the date the tank interior lining was installed.
448. OTHER TANK CORROSION PROTECTION - If any other tank corrosion protection methods are used, check the appropriate boxes to describe them. If methods used are not listed, check "other" and describe in the space provided.
449. DATE TANK CORROSION PROTECTION INSTALLED - If applicable, enter the date tank corrosion protection was installed.
450. YEAR SPILL AND OVERFILL INSTALLED - Check the appropriate boxes to indicate whether drop tube(s), spill containment, and striker plate(s) are installed. In the spaces provided, specify the year each type of equipment was installed.
451. TYPE OF SPILL PROTECTION - Enter the type of spill containment, drop tube, and striker plate installed.
452. YEAR OVERFILL PROTECTION EQUIPMENT INSTALLED - Check the appropriate box(es) to describe the type(s) of overfill protection equipment installed. In the space provided, specify the year this equipment was installed.
453. TANK LEAK DETECTION (SINGLE WALL TANKS ONLY) - Check the leak detection system(s) used to comply with monitoring requirements for the tank itself. CHECK ALL THAT APPLY. If you use a leak detection system that is not listed, check "other" and describe the system in the space provided.
454. TANK LEAK DETECTION (DOUBLE WALL TANKS) - For double wall tanks, tanks in vaults, or tanks with a bladder, check the leak detection system(s) used to monitor the tank secondary containment system. CHECK ONE ITEM ONLY.
455. ESTIMATED DATE LAST USED - Complete this section only if the tank was closed in place. Enter the date the tank was last used.
456. ESTIMATED QUANTITY OF SUBSTANCE REMAINING IN TANK - Complete this section only if the tank was closed in place. Enter the estimated quantity of hazardous substance remaining in the tank (in gallons).
457. TANK FILLED WITH INERT MATERIAL - Complete this section only if the tank was closed in place. Check whether or not the tank was filled with an inert material prior to closure.

UNIFIED PROGRAM CONSOLIDATED FORM
TANKS

UNDERGROUND STORAGE TANKS – TANK PAGE 2

VI. PIPING CONSTRUCTION (Check all that apply)

	UNDERGROUND PIPING				ABOVEGROUND PIPING			
SYSTEM TYPE	☐ 1. PRESSURE	☒ 2. SUCTION	☐ 3. GRAVITY	458.	☐ 1. PRESSURE	☐ 2. SUCTION	☐ 3. GRAVITY	459.
CONSTRUCTION/ MANUFACTURER	☐ 1. SINGLE WALL	☐ 3. LINED TRENCH	☐ 99. OTHER	460.	☐ 1. SINGLE WALL	☐ 95. UNKNOWN		462.
	☒ 2. DOUBLE WALL	☐ 95. UNKNOWN			☐ 2. DOUBLE WALL	☐ 99. OTHER		
MANUFACTURER				461.	MANUFACTURER			463.
☐ 1. BARE STEEL	☐ 6. FRP COMPATIBLE W/100% METHANOL				☐ 1. BARE STEEL	☐ 6. FRP COMPATIBLE W/100% METHANOL		
☐ 2. STAINLESS STEEL	☐ 7. GALVANIZED STEEL				☐ 2. STAINLESS STEEL	☐ 7. GALVANIZED STEEL		
☐ 3. PLASTIC COMPATIBLE WITH CONTENTS	☐ 95. UNKNOWN				☐ 3. PLASTIC COMPATIBLE W/ CONTENTS	☐ 8. FLEXIBLE (HDPE)	☐ 99. OTHER	
☒ 4. FIBERGLASS	☐ 8. FLEXIBLE (HDPE)	☐ 99. OTHER			☐ 4. FIBERGLASS	☐ 9. CATHODIC PROTECTION		
☐ 5. STEEL W/COATING	☐ 9. CATHODIC PROTECTION			464.	☐ 5. STEEL W/COATING	☐ 95. UNKNOWN		465.

VII. PIPING LEAK DETECTION (Check all that apply) (A description of the monitoring program shall be submitted to the local agency.)

UNDERGROUND PIPING

SINGLE WALL PIPING 466.

PRESSURIZED PIPING (Check all that apply):

☐ 1. ELECTRONIC LINE LEAK DETECTOR 3.0 GPH TEST WITH AUTO PUMP SHUT-OFF FOR LEAK, SYSTEM FAILURE, AND SYSTEM DISCONNECTION + AUDIBLE AND VISUAL ALARMS.

☐ 2. MONTHLY 0.2 GPH TEST

☐ 3. ANNUAL INTEGRITY TEST (0.1 GPH)

CONVENTIONAL SUCTION SYSTEMS

☐ 5. DAILY VISUAL MONITORING OF PUMPING SYSTEM + TRIENNIAL PIPING INTEGRITY TEST (0.1 GPH)

SAFE SUCTION SYSTEMS (NO VALVES IN BELOW GROUND PIPING):

☐ 7. SELF MONITORING

GRAVITY FLOW

☐ 9. BIENNIAL INTEGRITY TEST (0.1 GPH)

SECONDARILY CONTAINED PIPING

PRESSURIZED PIPING (Check all that apply):

10. CONTINUOUS TURBINE SUMP SENSOR WITH AUDIBLE AND VISUAL ALARMS AND (Check one)
  - ☐ a. AUTO PUMP SHUT OFF WHEN A LEAK OCCURS
  - ☐ b. AUTO PUMP SHUT OFF FOR LEAKS, SYSTEM FAILURE AND SYSTEM DISCONNECTION
  - ☐ c. NO AUTO PUMP SHUT OFF

☐ 11. AUTOMATIC LINE LEAK DETECTOR (3.0 GPH TEST) WITH FLOW SHUT OFF OR RESTRICTION

☐ 12. ANNUAL INTEGRITY TEST (0.1 GPH)

SUCTION/GRAVITY SYSTEM

☒ 13. CONTINUOUS SUMP SENSOR + AUDIBLE AND VISUAL ALARMS

EMERGENCY GENERATORS ONLY (Check all that apply)

☒ 14. CONTINUOUS SUMP SENSOR WITHOUT AUTO PUMP SHUT OFF AUDIBLE AND VISUAL ALARMS

☐ 15. AUTOMATIC LINE LEAK DETECTOR (3.0 GPH TEST) WITHOUT FLOW SHUT OFF OR RESTRICTION

☒ 16. ANNUAL INTEGRITY TEST (0.1 GPH)

☐ 17. DAILY VISUAL CHECK

ABOVEGROUND PIPING

SINGLE WALL PIPING 467.

PRESSURIZED PIPING (Check all that apply):

☐ 1. ELECTRONIC LINE LEAK DETECTOR 3.0 GPH TEST WITH AUTO PUMP SHUT OFF FOR LEAK, SYSTEM FAILURE, AND SYSTEM DISCONNECTION + AUDIBLE AND VISUAL ALARMS.

☐ 2. MONTHLY 0.2 GPH TEST

☐ 3. ANNUAL INTEGRITY TEST (0.1 GPH)

☐ 4. DAILY VISUAL CHECK

CONVENTIONAL SUCTION SYSTEMS (Check all that apply)

☐ 5. DAILY VISUAL MONITORING OF PIPING AND PUMPING SYSTEM

☐ 6. TRIENNIAL INTEGRITY TEST (0.1 GPH)

SAFE SUCTION SYSTEMS (NO VALVES IN BELOW GROUND PIPING):

☐ 7. SELF MONITORING

GRAVITY FLOW (Check all that apply):

☐ 8. DAILY VISUAL MONITORING

☐ 9. BIENNIAL INTEGRITY TEST (0.1 GPH)

SECONDARILY CONTAINED PIPING

PRESSURIZED PIPING (Check all that apply):

10. CONTINUOUS TURBINE SUMP SENSOR WITH AUDIBLE AND VISUAL ALARMS AND (Check one)
  - ☐ a. AUTO PUMP SHUT OFF WHEN A LEAK OCCURS
  - ☐ b. AUTO PUMP SHUT OFF FOR LEAKS, SYSTEM FAILURE AND SYSTEM DISCONNECTION
  - ☐ c. NO AUTO PUMP SHUT OFF

☐ 11. AUTOMATIC LEAK DETECTOR

☐ 12. ANNUAL INTEGRITY TEST (0.1 GPH)

SUCTION/GRAVITY SYSTEM

☐ 13. CONTINUOUS SUMP SENSOR + AUDIBLE AND VISUAL ALARMS

EMERGENCY GENERATORS ONLY (Check all that apply)

☐ 14. CONTINUOUS SUMP SENSOR WITHOUT AUTO PUMP SHUT OFF AUDIBLE AND VISUAL ALARMS

☐ 15. AUTOMATIC LINE LEAK DETECTOR (3.0 GPH TEST)

☐ 16. ANNUAL INTEGRITY TEST (0.1 GPH)

☐ 17. DAILY VISUAL CHECK

VIII. DISPENSER CONTAINMENT

DISPENSER CONTAINMENT 468.

DATE INSTALLED

N/A

☐ 1. FLOAT MECHANISM THAT SHUTS OFF SHEAR VALVE

☐ 2. CONTINUOUS DISPENSER PAN SENSOR + AUDIBLE AND VISUAL ALARMS

☐ 3. CONTINUOUS DISPENSER PAN SENSOR WITH AUTO SHUT OFF FOR DISPENSER + AUDIBLE AND VISUAL ALARMS

☐ 4. DAILY VISUAL CHECK 469.

☐ 5. TRENCH/LINER MONITORING

☐ 6. NONE

IX. OWNER/OPERATOR SIGNATURE

I certify that the information provided herein is true and accurate to the best of my knowledge.

SIGNATURE OF OWNER/OPERATOR

DATE: 2-28-2008

TK-1-85 470.

NAME OF OWNER/OPERATOR (print): David McGraw

TITLE OF OWNER/OPERATOR: Associate Lab Director / COO 472.

Permit Number (Agency use only) 473.	Permit Approved By (Agency use only) 474.	Permit Expiration Date (Agency use only) 475.

UST - Tank Form Page 2 Instructions
(Formerly SWRCB Permit Application Form B)

Please number all pages of your submittal.

458. PIPING SYSTEM TYPE (UNDERGROUND) -

459. PIPING SYSTEM TYPE (ABOVEGROUND) -

For items 458 and 459, check the appropriate boxes to describe the type of product/waste piping installed in this tank system. Describe underground and aboveground (if any) piping separately in the columns provided.

460. PIPING CONSTRUCTION (UNDERGROUND) - Check the appropriate box(es) to describe the type(s) of containment provided for the underground product/waste piping.

461. PIPING MANUFACTURER (UNDERGROUND) - Enter the name of the piping manufacturer.

462. PIPING CONSTRUCTION (ABOVEGROUND) - Check the appropriate box(es) to describe the type(s) of containment provided for any aboveground portions of the product/waste piping.

463. PIPING MANUFACTURER (ABOVEGROUND) - Enter the name of the piping manufacturer.

464. PIPING MATERIAL AND CORROSION PROTECTION (UNDERGROUND) - Check the appropriate boxes to describe the material(s) of construction of the primary (i.e. inner) underground product/waste piping and indicate whether any cathodic (i.e. corrosion) protection systems are installed.

465. PIPING MATERIAL AND CORROSION PROTECTION (ABOVEGROUND) - Check the appropriate boxes to describe the material(s) of construction of any primary (i.e. inner) aboveground product/waste piping and indicate whether any cathodic (i.e. corrosion) protection systems are installed.

466. PIPING LEAK DETECTION (UNDERGROUND) -

467. PIPING LEAK DETECTION (ABOVEGROUND)-

For items 466 and 467, check the appropriate boxes to describe all leak detection method(s) used to comply with the monitoring requirements for regulated piping.

468. DATE DISPENSER CONTAINMENT INSTALLED - If the tank system is equipped with dispenser secondary containment (i.e. dispenser sumps or pans) equipment, enter the date that equipment was installed. If the tank system has a dispenser that is not secondarily contained, specify "None" in the space provided for the date. If the system does not include dispensers (e.g. standby generator tank system), enter "N/A."

469. DISPENSER CONTAINMENT TYPE - Check the appropriate box to describe how dispenser secondary containment is monitored for leaks.

SIGNATURE OF OWNER/OPERATOR - The owner or an authorized agent of the owner shall sign in the space provided. This signature certifies that the signer believes that all information submitted is true, accurate, and complete.

470 DATE CERTIFIED - Enter the date the form was signed.

471. OWNER/ OPERATOR NAME - Print or type the name of the person signing the form.

472. OWNER/ OPERATOR TITLE - Enter the title of the person signing the form.

473. PERMIT NUMBER - This space is for agency use only.

474. PERMIT APPROVED BY - This space is for agency use only.

475. PERMIT EXPIRATION DATE - This space is for agency use only.

Lawrence Berkeley National Laboratory

UST Monitoring & Emergency Response Plan

June 10, 2003

(Amended 2/25/08)

Lawrence Berkeley National Laboratory
One Cyclotron Road
Berkeley, California 94720

Lawrence Berkeley National Laboratory
UST Monitoring & Emergency Response Plan

Approval Signature Sheet

Approved By: 6/10/03
Ron Pauer Date
Group Leader
Environmental Services Group

Approved By: 4/8/03
Don Weber Date
Group Leader
Operations & Maintenance Group, Facilities Division

Reviewed By: 4/4/03
John Hutchings Date
Technical Supervisor
Operations & Maintenance Group, Facilities Division

Prepared By: 3/27/03
Robert Fox Date
Regulatory Compliance Specialist
Environmental Services Group

TABLE OF CONTENTS

1.0 INTRODUCTION

The Berkeley Laboratory maintains eight underground storage tanks (USTs). The largest tanks are two 10,000-gallon tanks located at Building 76. One tank contains diesel fuel and the other contains gasoline. In the event of a spill into the secondary containment, these tanks are designed to continue operation since they support emergency vehicles. The other six USTs support engine generators or boilers and are 4,000-gallons or smaller in size. These six USTs are located at Building 2, 55/90, 66 and 85 and all contain diesel fuel.

The purpose of this plan is to describe how these USTs are monitored and how to respond to a fuel spill at a UST.

2.0 MONITORING PLAN

2.1 Roles and Responsibilities

The Facilities Division is the owner of all the underground storage tanks (USTs) at the Berkeley Lab. As the tank owner, the Facilities Division is responsible for maintaining the USTs in good working order and is responsible for operating the USTs in a manner that meets all regulatory requirements. The Operations and Maintenance Group within the Facilities Division carries out these responsibilities. The Operations and Maintenance Group is responsible for arranging all testing and monitor certification for the USTs. The Operations and Maintenance Group maintains all monitoring documents.

The Operations and Maintenance Group shall give the Environmental Services Group (ESG) at least one week notice prior to conducting any UST certification, testing or repairs. During certification or testing the Operations and Maintenance Group will have one qualified person present to oversee the certification or testing. This person will be familiar with the UST system and have knowledge of UST regulations.

The Environmental Services Group shall notify the City of Berkeley Toxics Division at least 48 hours prior to the Operations and Maintenance Group conducting any UST certification, testing, or repairs. ESG will notify the Department of Energy's Berkeley Site Office (DOE/BSO) in order to coordinate participation under DOE's operational awareness program. ESG will maintain UST permits and prepare any permit modifications as needed. During certification or testing the ESG will have one person present to oversee the certification or testing. This person will be familiar with the UST system and have expert knowledge of UST regulations.

The on site Berkeley Lab Fire Department responds to large spills or spills that have a potential to negatively impact the environment. The Fire Department is managed by the Alameda County

Fire Department under contract to the Berkeley Laboratory. The Fire Department has an automatic aid agreement with Alameda County and the City of Berkeley.

2.2 Daily Inspections

Motor Pool personnel, within the Facilities Division, check the Building 76 UST leak detection monitor each operational day (Monday-Friday). For the other USTs, Operations and Maintenance Group personnel check the UST leak detection monitors daily. Results are logged into UST logbooks located at each UST area. Details regarding daily inspections are found in Operations and Maintenance Group procedures for each UST area (see **Appendix B**).

2.3 Annual Monitor Certification

An individual (third party vendor or in-house staff) performs leak detection monitor certification annually. This individual shall be certified by the monitor manufacturer and re-certified every 36 months. (Facilities maintains copies of monitor manufacturer certifications.) Typically this work is done in October or November and includes testing of the leak detection monitor, all liquid sensors, and the in-tank probe. Each monitor, sensor, and probe must be tagged and include the date of certification and the individual's contractor or tank tester license number.

2.4 Annual Product Precision Line Test (primary piping) and Annual Mechanical Line Leak Detector Test (red jacket)

A vendor that is a licensed tank tester by the State of California annually performs product precision line testing and mechanical line leak detector (red jacket) testing. (Facilities maintains a copy of the license or confirms the license on State Water Resources Control Board website during the procurement process.) Typically this work is done in October or November and includes testing of pressurized piping and mechanical line leak detectors at Building 76 USTs and suction piping at Building 2, 55/90, 66, and 85 USTs. Note that the same individual may also perform the monitor certification if they are certified by the monitor manufacturer.

2.5 Secondary Containment Testing

Performed by a vendor that is a licensed tank tester, licensed tank installer, or holds a current class "A" general engineering contractor license, C-10 electrical contractor license, C-34 pipeline contractor license, C-36 plumbing contractor license, or C-61 (D40) limited specialty service station equipment and maintenance contractor license issued by the Contractors State License Board. A tank tester license and a tank installer license are held by the individual. A technician may work under a CSLB license. (Facilities maintains a copy of the license or confirms the license on Contractors State License Board website or State Water Resources Control Board website.)

Spill buckets are tested annually. Every 36 months secondary containment testing is conducted that includes testing of the tank's annular space, product/turbine sumps, and secondary containment piping. The Berkeley Lab qualifies for two exemptions from secondary containment testing. (1) Systems with suction piping include Buildings 2, 55/90, 66, and 85. The piping and sumps for systems with suction piping are exempt from secondary containment testing requirements. (2) The UST at Building 85 has its annular space filled with brine and so its annular space is exempt from secondary containment testing.

2.6 Building 76 UST – Gasoline Vapor Recovery Testing

The fuel dispensers at the Building 76 underground storage tanks are "Balance Phase II vapor recovery systems". Per Air District requirements (Rule 8-7-302.14) "Balance Phase II vapor recovery systems" for gasoline dispensing require back pressure testing every 12 months. Currently, the Bay Area Air Quality District does not have any certification requirements for the person performing the back pressure testing.

2.7 Records Retention

All records are maintained on site for a minimum of three years and, afterwards, may be sent to LBNL Archives or maintained on site indefinitely. UST monitor printouts are considered records and are to be maintained on site at either the Motor Pool Office (Building 76 UST) or at the Operations and Maintenance Office (all other USTs) for the minimum three-year period. Other records which require retention include but are not limited to the following: UST daily inspection logbooks, annual monitor certification reports, secondary containment testing reports, gasoline vapor recovery system back pressure testing reports, product precision line testing reports, mechanical leak line testing reports, City of Berkeley inspection reports, and any other reports which document compliance activities.

3.0 RESPONSE PLAN

3.1 Small versus a Large Spill

Whether a small spill or a large spill occurs, notify Robert Fox, environmental specialist, at extension 7327. If Robert Fox is not available, notify Ron Pauer, Environmental Services Group Leader, at extension 7416. If the spill occurs after hours, call the Fire Department at extension 7911.

Small Spill - In general, a small spill will have the following attributes:

- Less than 5 gallons
- Can be cleaned up by two men in an hour
- No injury has occurred
- The spill has not entered a storm drain.

To clean up small spills a spill kit (20 gallon Overpak plastic drum) is located at each UST. These spill kits typically contain spaghetti socks, sump skimmers, skimming mat pads, gloves, booties, safety glasses, duct tape, and Tyvek overalls. The 20 gallon Overpak spill kits are maintained by the Operations and Maintenance Group of the Facilities Division. Additional spill clean up equipment is described in Section 3.3.

Large Spill – For a large spill the Fire Department is called at 7911. The Fire Department will coordinate the emergency response. Clean up is typically performed by the Operations and Maintenance Group of the Facilities Division (tank owner) and may be assisted by the Waste Management Group of the Environment, Health & Safety Division.

3.2 First Response – Large Spill

First response emergency services are provided by the Berkeley Lab's on-site fire station at Building 48. Besides equipment and staff on-site, the on-site fire station has an automatic aid agreement with Alameda County and the City of Berkeley.

Other Berkeley Lab groups that may assist the Fire Department in first response are the Maintenance and Operations Group, the Waste Management Group, the Environmental Services Group, the Site Access and Security Group, and the Health Services Group. As mentioned earlier, the Maintenance and Operations Group typically would clean up a fuel spill from an underground storage tank. The Waste Management Group would assist to ensure the safe offsite transport and disposal of any hazardous waste resulting from a fuel spill. The Environmental Services Group would provide spill/release, assessment, and reporting to the City of Berkeley and any other regulatory agencies. The Site Access and Security Group would provide traffic control if needed and the Health Services Group would provide first aid if needed. Additional detail regarding the emergency response organization at the Berkeley Lab may be found in LBNL's *Master Emergency Plan, revision 1, 4/1/99*, PUB-533.

3.3 Operation & Maintenance Group's Spill Clean Up Equipment

Besides the 20 gallon Overpak spill kits located at each UST, the Operation and Maintenance Group has additional equipment strategically located throughout the Laboratory. Spill clean-up equipment may be found in Building 76 in the storage area above room 212 and in a cargo

container at Building 88. This equipment includes spaghetti socks, pig booms, skimming mat pads, kitty litter/vermiculite, sump skimmers, and drain blockers and plugs. Air pumps and mechanical pumps are available in Building 76 for motor fuel spill clean up. Additional emergency facilities and equipment are more fully described in LBNL's *Master Emergency Plan, revision 1, 4/1/99*, PUB-533.

3.4 Fire Department Equipment at Building 48

The following equipment is available for emergency response:

- 1 fire engine, 1250 gpm Type I, in service (carries 5 gallons of absorbent vermiculite)
- 1 fire engine, 1000 gpm Type I, in reserve (carries 5 gallons of absorbent vermiculite)
- 1 Hazardous Materials response vehicle, 14ft. panel van
- 4x4 grass-firefighting truck
- Intensive care ambulance
- Vetter System, used for diking storm drains
- Standard turnout clothing for each firefighter and suits that provide full encapsulation

Additional emergency facilities and equipment are more fully described in LBNL's *Master Emergency Plan*

3.5 Equipment Available Through Automatic Aid

Alameda County – 2 hazardous materials response vehicles
City of Berkley – 1 hazardous materials response vehicle

APPENDIX A - Key Personnel and Phone Numbers

Security & Emergency Operations Group

Fire Department (emergency number)	**x 7911**
Dan Lunsford, Group Leader	x 6016

Environmental Services Group (Spill Assessment Reporting)

Robert Fox, Environmental Specialist	x 7327
Ron Pauer, Group Leader	x 7614

Operations and Maintenance (UST Operator)

Mike Botello, Designated UST Operator	x 7939
O & M Dispatch	x 7941
Ken Fletcher, Supervisor	x 5770

Waste Management Group

Nancy Rothermich, Group Leader	x 4644

APPENDIX B – UST Operating Procedures

OPERATING PROCEDURE

UNDERGROUND STORAGE TANK MONITORING: TK-3-2, TK-4-2

APPLICATION

Monitoring of underground storage tanks TK-3-2 and TK-4-2 to ensure that the tanks are not leaking. Tanks TK-3-2 and TK-4-2 are underground diesel fuel storage tanks located on the north side of Bldg 2 near the liquid nitrogen tank. TK-3-2 supplies fuel oil for boilers BR-1-2 and BR-2-2. TK-4-2 supplies fuel to emergency generator EG-68-2. The tank locations and system overview are shown in Figures 1 and 2. The procedure is divided into daily and yearly actions. In addition to the monitoring performed by Facilities Department technicians, the Maintenance Superintendent arranges for calibration of the Veeder Root Leak Detection System on an annual basis. Prescribed tank and line tightness tests may also be performed by outside contractors.

SPECIAL INSTRUCTIONS

- **CONTACT:**

  In case of an emergency such as a fire or large spill (>5 gallons) call:

  - Fire Department, x7911
  - Maintenance Office, x 5481
  - EH&S Environmental Services: Robert Fox, x7327 or Ginny Lackner, x7413

  In case of a small spill:

  - Use a spill kit to mitigate and contain spills.
  - Prevent fuel spills from reaching storm drains.

  For small spills call:

  - Maintenance Office, x 5481
  - EH&S Environmental Services: Robert Fox, x7327 or Ginny Lackner, x7413

  After hours:

  - Fire Department, x7911
  - EH&S Phone Duty Officer, 510-206-2305 (cell) or 510-425-0616 (pager)

- **Training required:** Use of Veeder Root TLS-300 Leak Detection System, tank and sump monitoring, and emergency response.
- **Records:** Retain monitor printouts in the Maintenance Office for a minimum of three years.
- **Tank Specifications**
  - Tank TK-3-2. Double-walled, fiberglass, 4,000-gallon diesel fuel tank; supplies BR-1-2 and BR-2-2; installed in 1988; City of Berkeley Registration ID No. 2-1.
  - Tank TK-4-2. Double-walled, fiberglass, 1,000-gallon diesel fuel tank; supplies EG-68-2; installed in 1988; City of Berkeley Registration ID No. 2-2.
  - Tank and sump leak detection. Interstitial monitoring (Veeder Root TLS-300).
  - Piping. Suction, double walled, fiberglass.

WORK STEPS–DAILY

1. Inspect Veeder-Root TLS-300 Leak Detection System monitor for proper functioning by inspecting the monitor LCD display and printout. Review monitor display and printouts for alarm status, any indication of pass/fail, error messages and drastic changes in readings. If there is no warning or alarm condition active, then the monitor displays the " All Functions Normal" message. Monitor is on west wall of Bldg 2 Rm 129A.
2. If the Veeder-Root 300 is not operating properly or is in alarm, notify the Maintenance Supervisor immediately. The Maintenance Supervisor notifies the Maintenance Superintendent, who assesses the problem and contacts EH&S Environmental Services.
3. Enter initials, time, date, and results of alarm check and visual inspection in bound logbook. Logbook is located in Bldg 70, room 189.
4. Replace the monitor's printer paper supply when a red stripe appears on the printer paper.

WORK STEPS–Yearly

1. The Maintenance Superintendent arranges for annual certification of the Veeder-Root TLS 300 monitor and sensors by a Veeder-Root certified technician. The Maintenance Superintendent may also arrange for prescribed tank and line tightness tests to be performed by a State-licensed tank tester. The Maintenance Superintendent signs, dates, and files the original record of test results and sends copies to EH&S Environmental Services.

RESPONSIBILITIES AND CONTROLS

REV NO.	SME/Title	APPROVER/Title	DATE	EFFECTIVE DATE
0	John E. Hutchison (Print)	Don Weber/ Mgr. (Print)	3/7/03 03/07/2003	3/7/03 03/07/2003

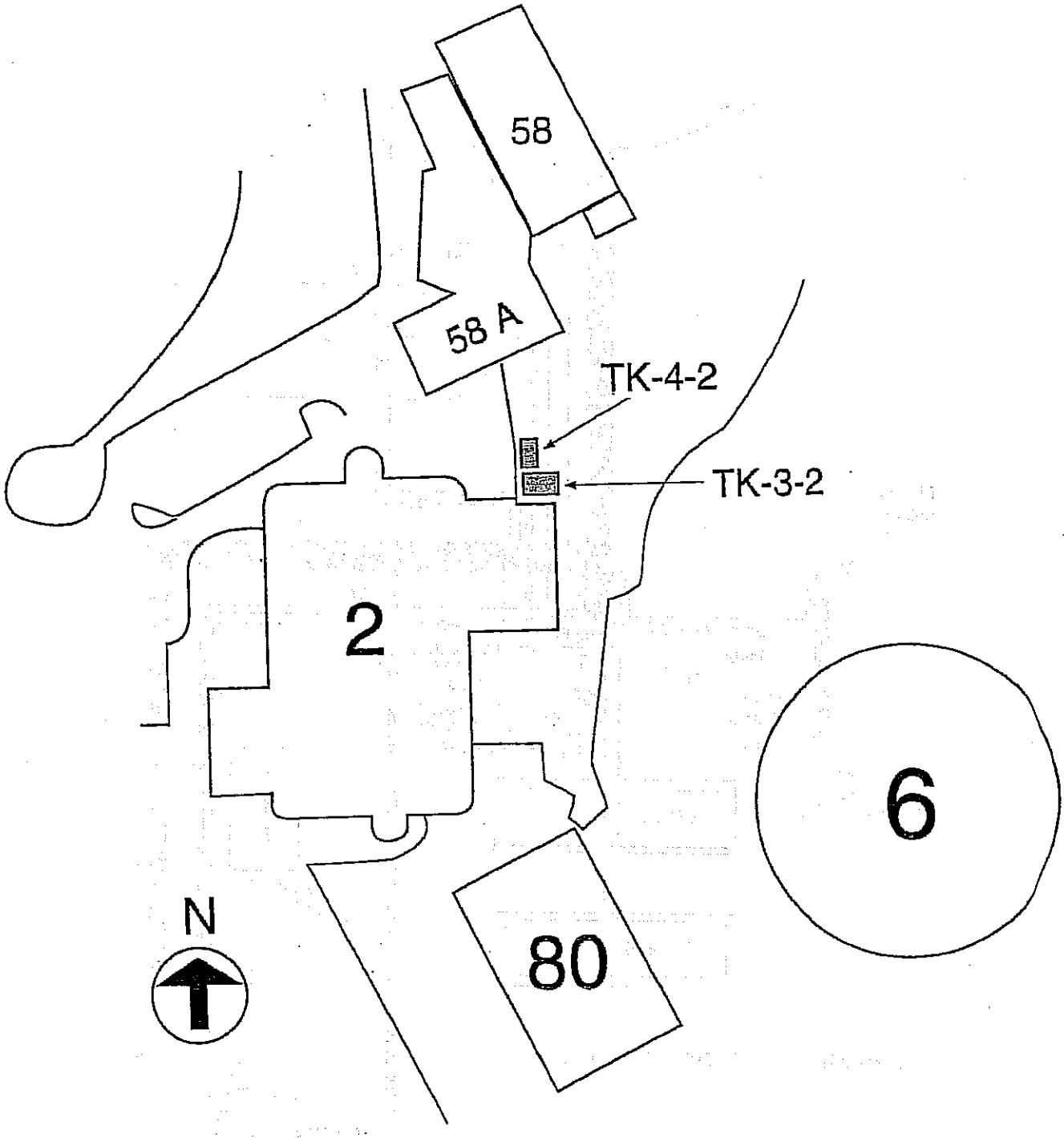


Figure 1: Aerial View of TK-3-2 Location

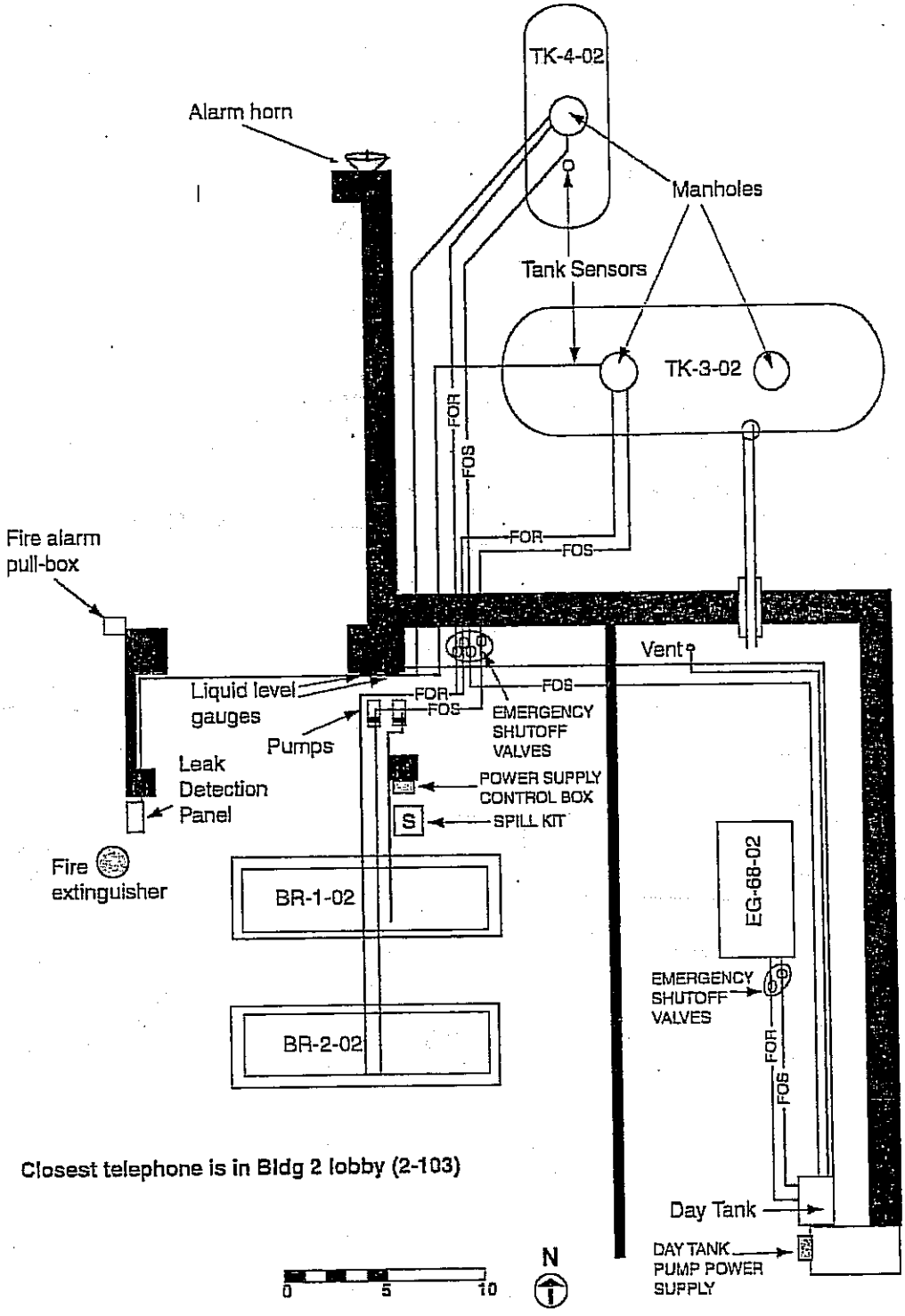


Figure 2: TK-3-2 System Overview

OPERATING PROCEDURE

UNDERGROUND STORAGE TANK MONITORING: TK-1-55

APPLICATION

Applies to Bldg 55. This procedure outlines steps for monitoring of underground storage tank TK-1-55 to ensure that the tank is not leaking. Tank TK-1-55 is an underground diesel fuel storage tank located between Buildings 55 and 90. This tank supplies fuel to emergency generator EG-69-55, located outside Bldg 90. The procedure is divided into daily and yearly actions. Figures 1 and 2 show the tank location and system overview. In addition, the Maintenance Superintendent arranges for yearly maintenance and calibration of the Veeder-Root leak detection system. Prescribed tank and line tightness tests may also be performed by outside contractors.

SPECIAL INSTRUCTIONS

- CONTACT:

  In case of an emergency such as a fire or large spill (>5 gallons) call:

  - Fire Department, x7911
  - Maintenance Office, x 5481
  - EH&S Environmental Services: Robert Fox, x7327 or Ginny Lackner, x7413

  In case of a small spill:

  - Use a spill kit to mitigate and contain spills.
  - Prevent fuel spills from reaching storm drains.

  For small spills call:

  - Maintenance Office, x 5481
  - EH&S Environmental Services: Robert Fox, x7327 or Ginny Lackner, x7413

  After hours:

  - Fire Department, x7911
  - EH&S Phone Duty Officer, 510-206-2305 (cell) or 510-425-0616 (pager)

- Records:

  - Documentation of monitoring is kept inside generator door and in Facilities Maint Office (76-212A). Retain monitor printouts in the Maintenance Office for a minimum of three years.

- **Training required:** Use of Veeder Root TLS-300 Leak Detection System, interstitial monitoring, yearly maintenance and emergency response.

- TANK SPECIFICATIONS

  TK-1-55 Tank: Double-walled steel with fiberglass reinforced plastic corrosion protection, 1,000-gallon Glasteel diesel fuel tank; installed in 1986; City of Berkeley Registration ID No. 55-1.

  Tank leak detection: Interstitial monitoring, liquid level gauging system, Veeder Root TLS-300).

  Piping: Suction, double walled, galvanized.

  Piping leak detection: Interstitial monitoring through pipe sump.

WORK STEPS—Daily

1. Inspect Veeder-Root Leak Detection System monitor for proper functioning by inspecting the monitor LCD display and printout. Review monitor display and printouts for alarm status, any indication of pass/fail, error messages and drastic changes in readings. If there is no warning or alarm condition active then the monitor displays the "All Functions Normal" message. Monitor is on north wall of Bldg 55B.
2. If the Veeder-Root TLS-300 is not operating properly or is in alarm, notify the Maintenance Supervisor immediately. The Maintenance Supervisor notifies the Maintenance Superintendent, who assesses the problem and contacts EH&S Environmental Services.
3. Visually inspect aboveground piping.
4. Enter initials, time, date, and results of alarm check and visual inspection in bound logbook. Logbook is kept inside the engine generator door.
5. Replace the monitor's printer paper supply when a red stripe appears on the printer paper.

WORK STEPS—YEARLY

1. The Maintenance Superintendent arranges for annual certification of the Veeder-Root TLS 300 monitor and sensors by a Veeder-Root certified technician. The Maintenance Superintendent may also arrange for prescribed tank and line tightness tests to be performed by a State-licensed tank tester. The Maintenance Superintendent signs, dates, and files the original record of test results, and sends copies to EH&S Environmental Services.

RESPONSIBILITIES AND CONTROLS

REV NO.	SME/Title	APPROVER/Title	DATE	EFFECTIVE DATE
0	Robin E. Hutchings (Print)	Don Weber/ Mgr. (Print)	03/07/2003	03/07/2003

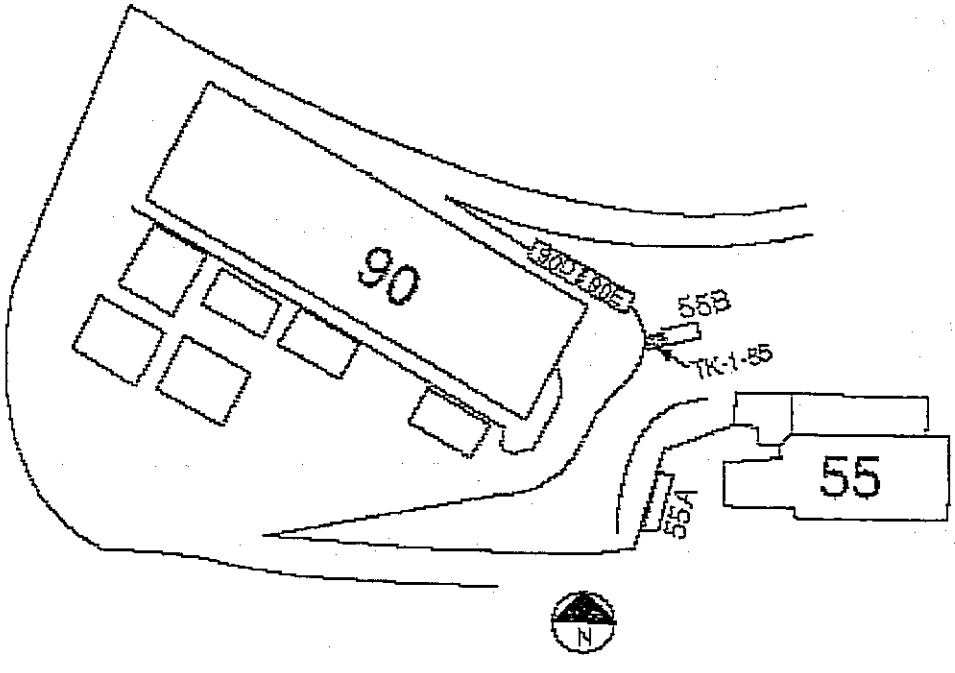


Figure 1: Aerial View of TK-1-55 Location

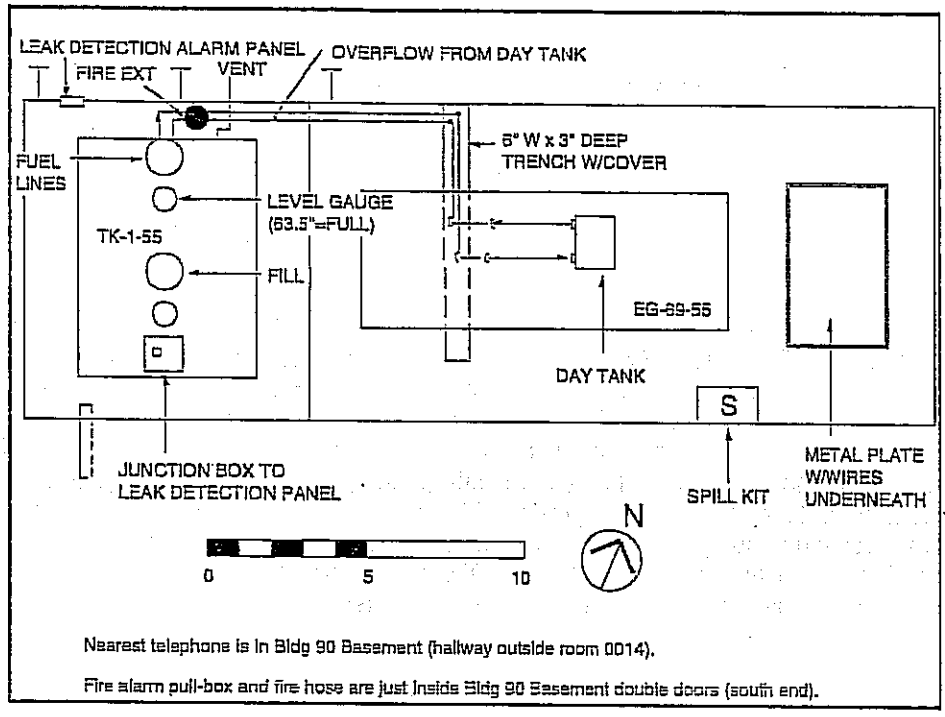


Figure 2: TK-1-55 System Overview

Both Tanks removed 7/17/03 R. Fox

OPERATING PROCEDURE

UNDERGROUND STORAGE TANK MONITORING: TK-2-66, TK-4-66

APPLICATION

This procedure outlines steps for monitoring of underground storage tanks TK-2-66 and TK-4-66 to ensure that the tank is not leaking. Tanks TK-2-66 and TK-4-66 are underground diesel fuel storage tanks located beneath a landscaped slope on the northwest side of Bldg 66. TK-2-66 supplies diesel fuel to emergency generator EG-67-66, and TK-4-66 supplies diesel fuel to boilers BR-1-66 and BR-2-66. The INCON TS-1000 Leak Detection System has a built-in alarm that is triggered by the presence of fuel or water at the sensor, breakage in the cable, or a short circuit in the system wiring. Daily inspection of the system is necessary to ensure proper functioning. Illumination of the green light only indicates normal system operation. Figures 1 and 2 show the tank locations and system overview, respectively. The Maintenance Supervisor annually arranges for calibration and testing of the INCON TS-1000 by a certified INCON technician. In addition, prescribed tank and line tightness tests may be performed by outside contractors.

SPECIAL INSTRUCTIONS

- **CONTACT:**

  In case of an emergency such as a fire or large spill (>5 gallons) call:

  - Fire Department, x7911
  - Maintenance Office, x 5481
  - EH&S Environmental Services: Robert Fox, x7327 or Ginny Lackner, x7413

  In case of a small spill:

  - Use a spill kit to mitigate and contain spills.
  - Prevent fuel spills from reaching storm drains.

  For small spills call:

  - Maintenance Office, x 5481
  - EH&S Environmental Services: Robert Fox, x7327 or Ginny Lackner, x7413

  After hours:

  - Fire Department, x7911
  - EH&S Phone Duty Officer, 510-206-2305 (cell) or 510-425-0616 (pager)

- **Training required:** Use of INCON TS-1000 Detection System, suction pipeline monitoring, emergency response.
- **Records:** Retain monitor printouts in the Maintenance Office for a minimum of three years.
- **Tank Specifications**
  - **Tank TK-2-66.** Double-walled steel with fiberglass reinforced plastic corrosion protection, 2,000-gallon Glasteel diesel fuel tank; installed in 1987; City of Berkeley Registration ID No. 66-2.
  - **Tank TK-4-66.** Double-walled steel with fiberglass reinforced plastic corrosion protection, 4,000-gallon Glasteel diesel fuel tank; installed in 1987; City of Berkeley Registration ID No. 66-1.
  - **Tank and sump leak detection.** Interstitial monitoring: INCON TS-1000.
  - **Piping.** Suction, single walled steel w/ coating.

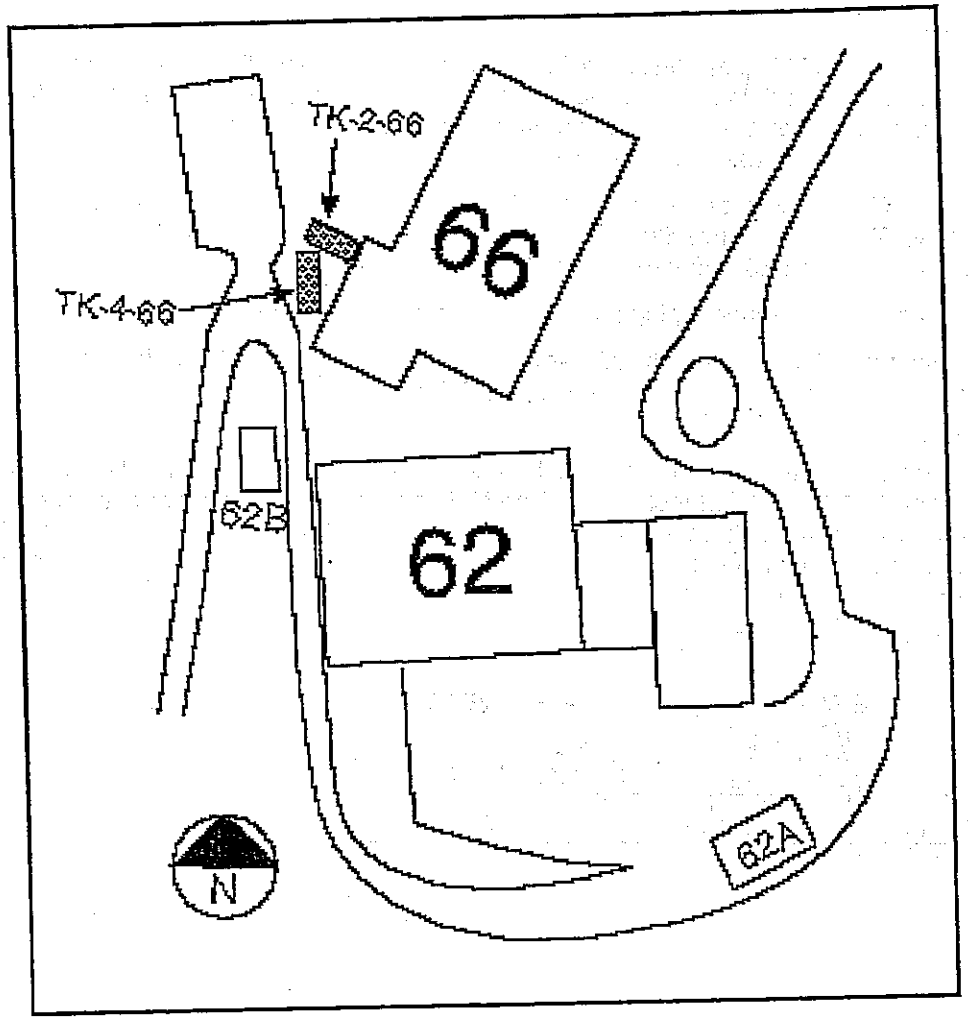


Figure 1: Aerial View of TK-2-66, TK-4-66 Location

WORK STEPS—Daily

1. Inspect INCON TS-1000 Leak Detection System monitor for proper functioning by inspecting the monitor LCD display and printout. Review monitor display and printouts for alarm status, any indication of pass/fail, error messages and drastic changes in readings. Monitor is on north wall of Bldg 66 Rm 110, next to day tank TK-3-66.
2. If the INCON TS-1000 is not operating properly or is in alarm, notify the Maintenance Supervisor immediately. The Maintenance Supervisor notifies the Maintenance Superintendent, who assesses problem and contacts EH&S Environmental Services.
3. Visually inspect aboveground piping and document results in bound logbook.
4. Enter initials, time, date, and results of alarm check and visual inspection in bound blue logbook. Logbook is on ledge just inside the door to Bldg 66 Rm 110.

WORK STEPS--Yearly

1. The Maintenance Superintendent arranges for annual certification of the INCON-TS-1000 monitor and sensors by an INCON certified technician. The Maintenance Superintendent may also arrange for prescribed tank and line tightness tests to be performed by a State-licensed tank tester. The Maintenance Superintendent signs, dates, and files the original record of test results, and sends copies to EH&S Environmental Services.

RESPONSIBILITIES AND CONTROLS

REV NO.	SME/Title	APPROVER/Title	DATE	EFFECTIVE DATE
0	John E. Hutchings (Print)	Don Weber/ Mgr. (Print)	3/7/03 03/07/2003	3/7/03 03/07/2003

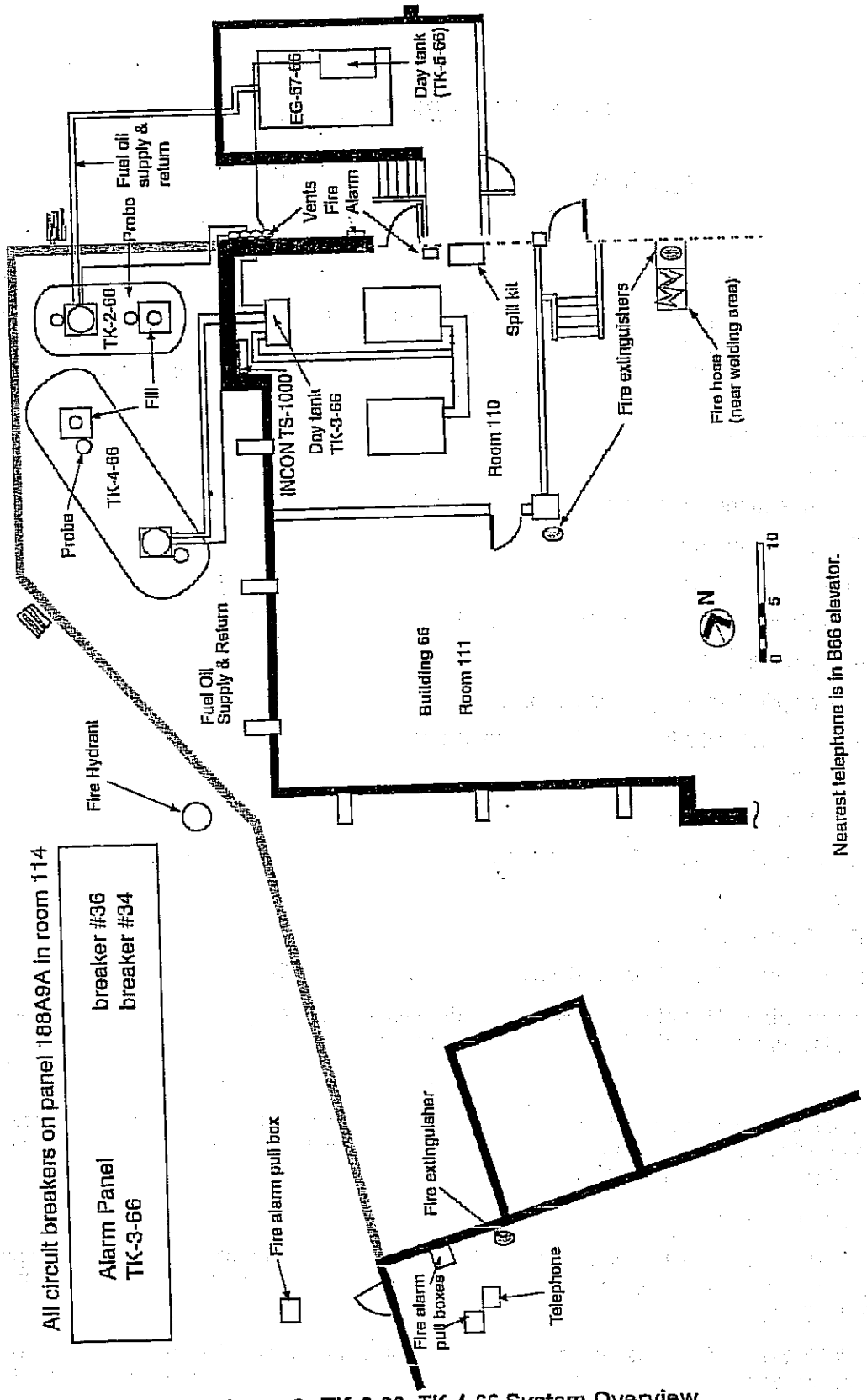


Figure 2: TK-2-66, TK-4-66 System Overview

OPERATING PROCEDURE

UNDERGROUND STORAGE TANK MONITORING: TK-5-76, TK-6-76

APPLICATION

Monitoring of underground fuel storage tanks TK-05-76 and TK-06-76 for leaks. Tanks TK-05-76 and TK-06-76 are located on the south side of Bldg 76 outside the motor pool offices. TK-05-76 supplies unleaded gasoline and TK-06-76 supplies diesel fuel. Figures 1 and 2 show the tank locations and system overview.

SPECIAL INSTRUCTIONS

- **CONTACT:**

  In case of an emergency such as a fire or large spill (>5 gallons) call:

  - Fire Department, x7911
  - Maintenance Office, x 5481
  - EH&S Environmental Services: Robert Fox, x7327 or Ginny Lackner, x7413

  In case of a small spill:

  - Use a spill kit to mitigate and contain spills.
  - Prevent fuel spills from reaching storm drains.

  For small spills call:

  - Maintenance Office, x 5481
  - EH&S Environmental Services: Robert Fox, x7327 or Ginny Lackner, x7413

  After hours:

  - Fire Department, x7911
  - EH&S Phone Duty Officer, 510-206-2305 (cell) or 510-425-0616 (pager)

- **Training required:** Use of Veeder Root TLS-350 Tank Level Sensor, Red Jacket mechanical line leak detector, inventory reconciliation, and emergency response.

- **Records:**

  - Monitoring logs and Veeder Root TLS-350 printouts are kept in the Motor Pool Office (Room 115, Bldg 76) near the monitoring control panels. Retain monitor printouts in the Maintenance Office for a minimum of three years.

- **Tank Specifications**

  - Tank TK-5-76. 10,000-gallon double-walled Glasteel (steel with fiberglass reinforced plastic corrosion protection) unleaded gasoline fuel tank; installed in 1990; City of Berkeley Registration ID No. 76-1.
  - Tank TK-6-76. 10,000-gallon double-walled Glasteel (steel with fiberglass reinforced plastic corrosion protection) diesel fuel tank; installed in 1990; City of Berkeley Registration ID No. 76-2.
  - Tank, Sump and Dispenser Pan Leak Detection: Automatic tank gauging and leak detection using the Veeder-Root TLS-350 tank level sensor and interstitial monitoring for vapor and secondary containment.
  - Piping. Pressurized, double-walled, fiberglass.

- Piping Leak Detection. Mechanical line leak detector (Red Jacket).

WORK STEPS--Daily

1. Check Veeder-Root TLS-350 display and printout for proper functioning, indication of pass/fail, and drastic changes in readings. If there is no warning or alarm condition active, then the monitor displays the "All Functions Normal" message. The Veeder-Root prints the date and time, individual readings, and the word PASS, FAIL, or INVALID. The monitor is located on the south wall of the Motor Pool office (Bldg 76, Rm 123J closet).
2. If the tank has failed a test, or if Veeder-Root is not operating properly, notify Motor Pool personnel, the Maintenance Superintendent, and EH&S immediately. The Maintenance Superintendent assesses the problem and contacts EH&S Environmental Services.
3. Tear off the Veeder-Root tape and file it in Motor Pool Office. The TLS-350 monitor is in the Bldg 76 Rm 123J closet.
4. Inspect the Veeder-Root monitor. Record in log book:
   - Date and time system was checked
   - Monitor displays "All Functions Normal" message (yes/no)
   - Initials of person performing check
   - Report any malfunction to Motor Pool, Maintenance Superintendent, and EH&S.
5. Enter pump meter reading in log in Motor Pool office. Reconcile log entries with Veeder-Root data. If you note any large discrepancies, report them to Motor Pool Supervisor and Maintenance Superintendent immediately. Log entries and all records pertaining to the underground storage tank system are kept for three years in the Motor Pool office for inspection by the City of Berkeley, BAAQMD inspectors, and EH&S.
6. **As needed.** Remove access covers to pumps and use a current calibrated hydrocarbon vapor detector to check valve systems for leaks, oxygen levels, and hydrocarbon levels. For entry into the gasoline or diesel turbine sumps follow procedure OPER-033, Confined Space Atmospheric Testing, and complete a confined space permit. The atmosphere should be checked with a gas meter for oxygen content and the lower explosive limit (LEL). Forced air shall be supplied to the sumps during work in the confined space. See Facilities Department procedures: OPER-082, Gastech Operation,Calibration; OPER-033, Confined Space Atmospheric Testing; ADMN-027, Confined Space Permit.
7. Record data in daily maintenance logbook. Logbook is located in B76 Motor Pool office.

WORK STEPS—Yearly

1. The Maintenance Superintendent arranges leak monitoring system certification by a Veeder-Root certified technician and prescribed tank and/or piping tightness tests by a State-licensed tank tester (usually an outside contractor). Upon receipt of contractor's report, Maintenance Superintendent signs, dates, and files originals and sends copies of contractor's report to EH&S Environmental Services.

RESPONSIBILITIES AND CONTROLS

REV NO.	SME/Title	APPROVER/Title	DATE	EFFECTIVE DATE
1	John E. Hatchell (Print)	Don Weber/ Mgr. (Print)	3/7/03 03/07/2003	3/7/03 03/07/2003

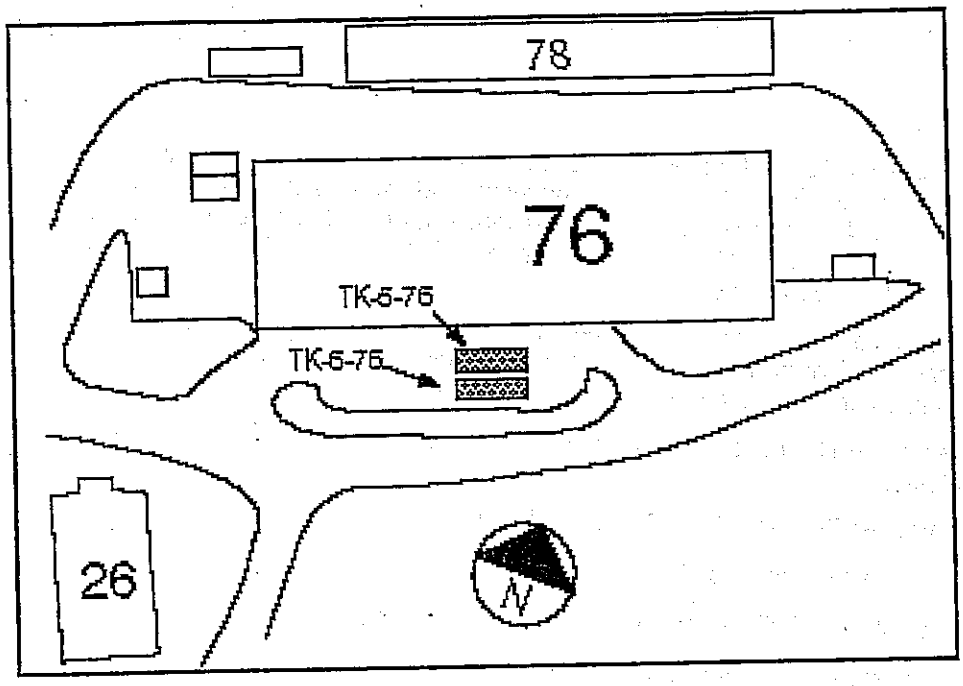


Figure 1: Aerial View of Tank Locations

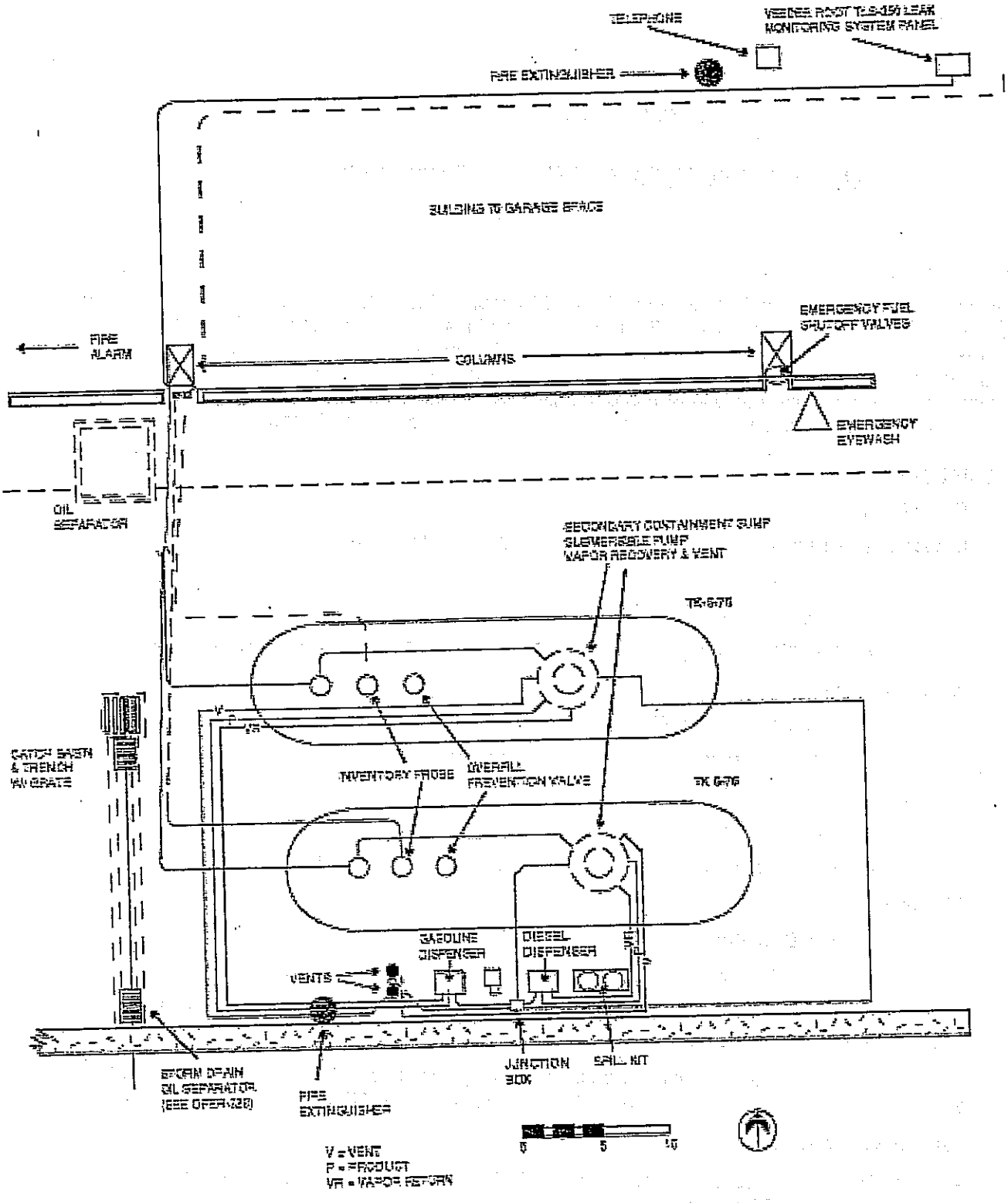


Figure 2: TK-05-76 & TK-06-76 System Overview

OPERATING PROCEDURE

UNDERGROUND STORAGE TANK MONITORING: TK-1-85

APPLICATION

Monitoring of underground fuel storage tank TK-1-85 for leaks. Tank TK-1-85 is an underground diesel fuel storage tank located on the east side of Bldg 85. The tank location and system overviews are shown in Figures 1 and 2. The procedure is divided into daily, weekly, and yearly actions. In addition to the monitoring performed by Facilities Division Plant Maintenance Technicians, the Maintenance Superintendent annually arranges for calibration and testing of the INCON TS1000 by a certified INCON technician. In addition, prescribed tank and line tightness tests may be performed by outside contractors.

SPECIAL INSTRUCTIONS

- CONTACT:

  In case of an emergency such as a fire or large spill (>5 gallons) call:

  - Fire Department, x7911
  - Maintenance Office, x 5481
  - EH&S Environmental Services: Robert Fox, x7327 or Ginny Lackner, x7413

  In case of a small spill:

  - Use a spill kit to mitigate and contain spills.
  - Prevent fuel spills from reaching storm drains.

  For small spills call:

  - Maintenance Office, x 5481
  - EH&S Environmental Services: Robert Fox, x7327 or Ginny Lackner, x7413

  After hours:

  - Fire Department, x7911
  - EH&S Phone Duty Officer, 510-206-2305 (cell) or 510-425-0616 (pager)

- **Training required:** Use of INCON TS-1000 EF1 leak detection and ATG system, suction pipeline testing, and emergency response.
- **Records:** Documentation of daily or weekly monitoring system checks is kept in Bldg 85, in hall outside Room 102. Retain monitor printouts in the Maintenance Office for a minimum of three years.
- **Tank Specifications**
  - Tank TK-1-85. 2,500-gallon double-walled FRP (reinforced fiberglass) diesel fuel tank. The tank's annular space is filled with brine.
  - Tank and Sump Leak Detection. Automatic tank gauging and leak detection: INCON TS-1000.
  - Piping. Suction, double-walled, fiberglass.

WORK STEPS--Daily

1. Inspect INCON TS-1000 monitor for proper functioning by examining the monitor LCD display and printout. Review monitor display and printouts for alarm status, any indication of pass/fail, error messages, and drastic changes in readings. Monitor is in Bldg 85, in the hall outside Rm 102.
2. If the INCON TS-1000 is not operating properly or is in alarm, notify the Maintenance Supervisor immediately. The Maintenance Supervisor notifies the Maintenance Superintendent, who assesses the problem and contacts EH&S Environmental Services.
3. Visually inspect aboveground piping and document the results in the bound logbook.
4. Enter initials, time, date, and results of alarm check and visual inspection in bound blue logbook. Logbook is in Bldg 85, in hall outside Rm 102.

WORK STEPS—Weekly

1. Deliver INCON TS-1000 printouts to the Maintenance Superintendent. The Maintenance Superintendent reviews, signs, dates, and files printouts.

WORK STEPS—Yearly

1. The Maintenance Superintendent arranges for annual certification of the INCON TS-1000 monitor and sensors by an INCON-certified technician. The Maintenance Superintendent may also arrange for prescribed tank and line tightness tests to be performed by a State-licensed tank tester. The Maintenance Superintendent signs, dates, and files original record of test results, and sends copies to EH&S Environmental Services Group.

RESPONSIBILITIES AND CONTROLS

REV. NO.	SME/Title	APPROVER/Title	DATE	EFFECTIVE DATE
1	[signature]	[signature]	3/7/03	3/7/03
	[signature] (Print)	Don Weber/ Mgr. (Print)	03/07/2003	03/07/2003

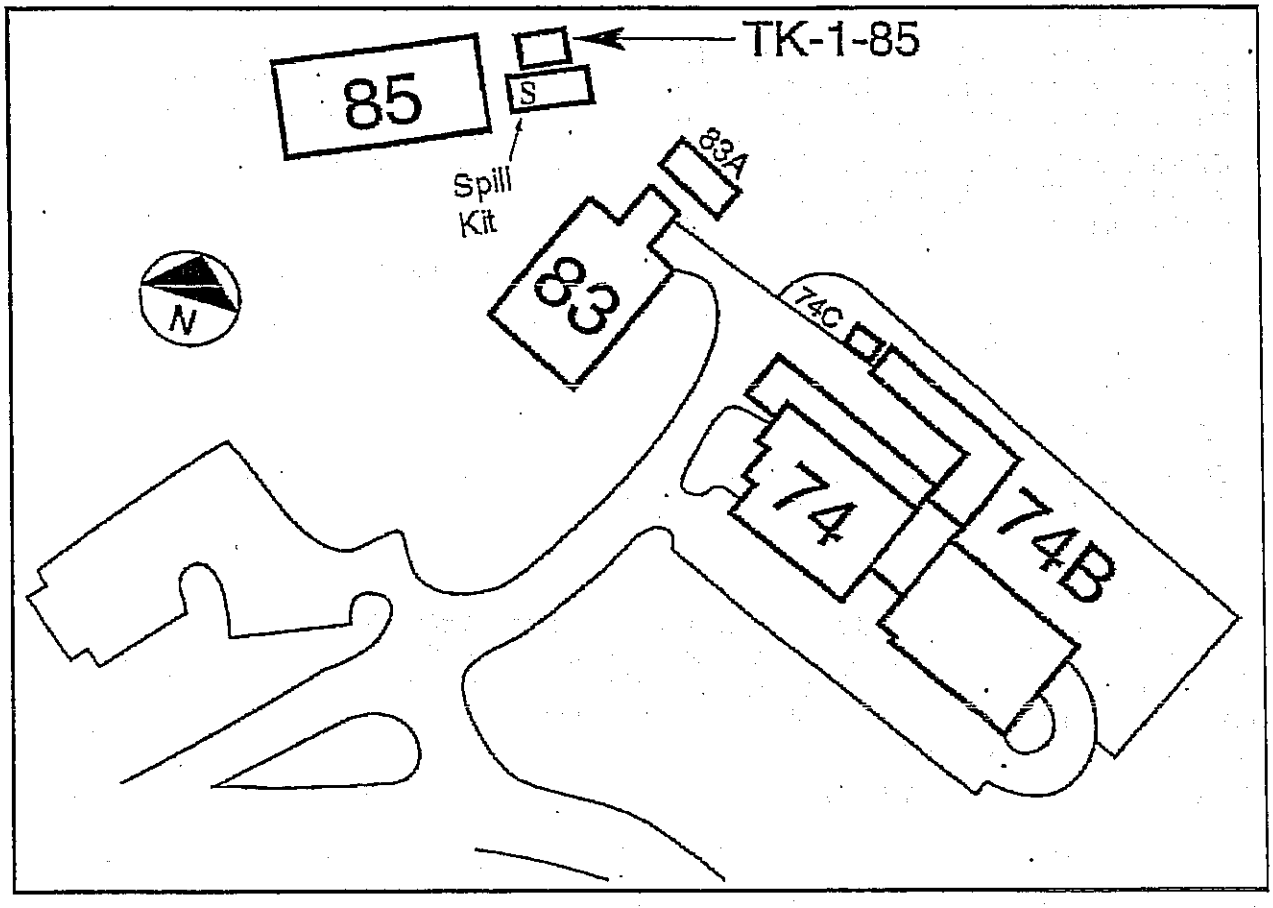


Figure 1: Aerial View of Tank Locations

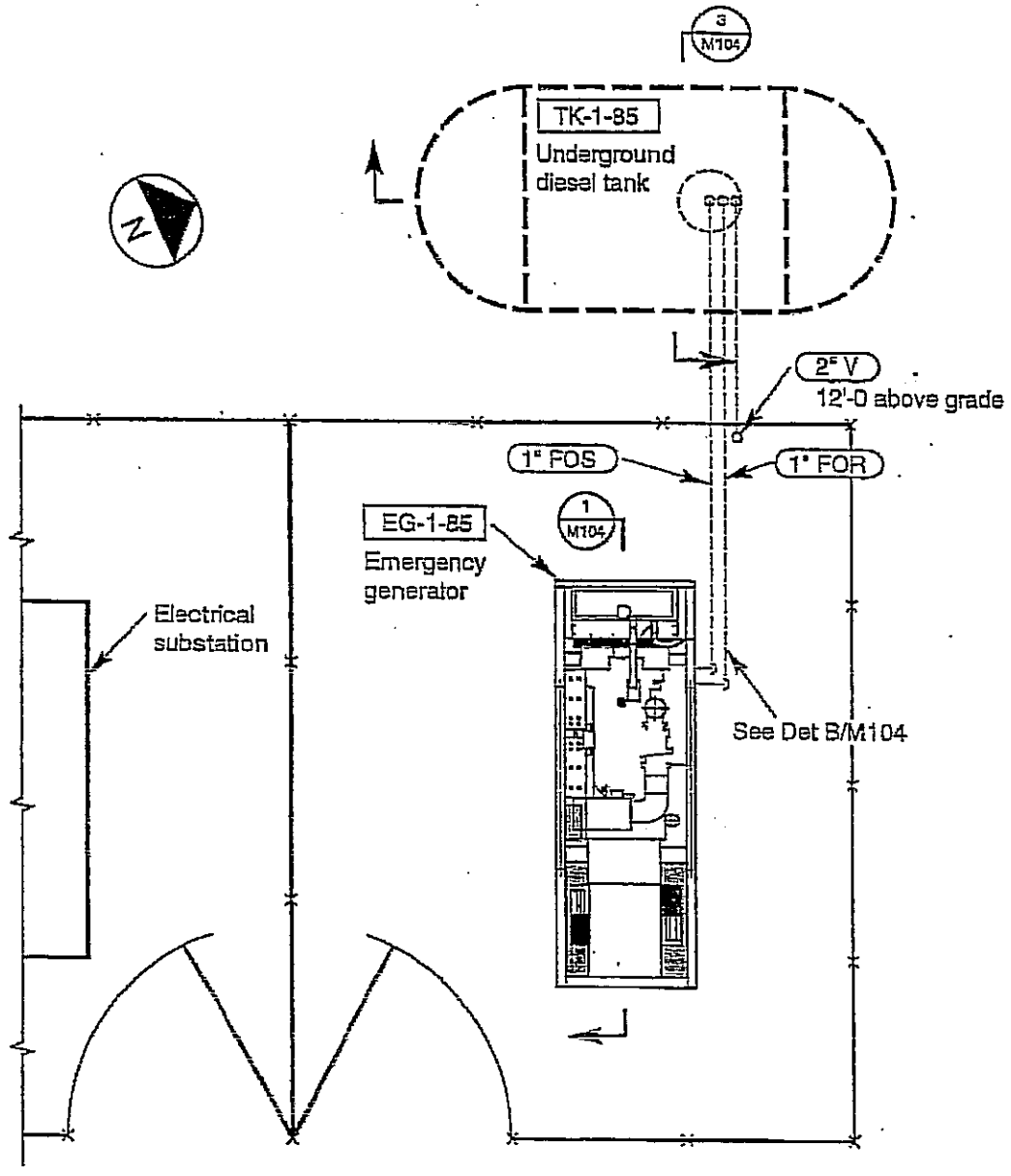


Figure 2: TK-01-85 System Overview

Amendment 022508

Record of Changes

Page 6, Appendix A	• Remove Bob Berninzoni and replace with Ken Fletcher, UST supervisor.

FIXED TREATMENT UNITS

- Permit
- Permit by Rule Annual Report

UNIFIED PROGRAM CONSOLIDATED FORM
HAZARDOUS WASTE

ONSITE HAZARDOUS WASTE TREATMENT NOTIFICATION – FACILITY PAGE

I. FACILITY IDENTIFICATION

BUSINESS NAME (Same as FACILITY NAME or DBA - Doing Business As) 3.	FACILITY ID# 1.
Lawrence Berkeley National Laboratory	

II. STATUS

NOTIFICATION STATUS 600.	PERMIT STATUS (Check all that apply) 601.	
☐ a. Amended	☒ a. Facility Permit	☐ d. Variance
☐ b. Initial	☐ b. Interim Status	☐ e. Consent Agreement
☒ c. Renewal (PBR Only)	☐ c. Standardized Permit	

III. NUMBER OF UNITS AT FACILITY

(Indicate the number of units you operate in each tier. Attach one unit notification page for each unit except CE-CL)

602.

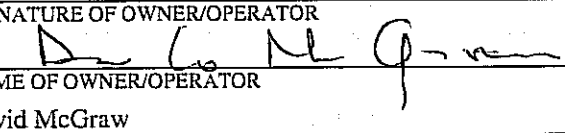
A.	_____	Conditionally Exempt – Small Quantity Treatment (CESQT) (May not function under any other tier.)
B.	_____	Conditionally Exempt Specified Wastestream (CESW)
C.	3	Conditionally Authorized (CA)
D.	3	Permit by Rule (PBR)
E.	_____	Conditionally Exempt – Limited (CEL)
F.	_____	Conditionally Exempt Commercial Laundry (CE-CL) (No unit page is required for laundries.)
G.	6	TOTAL UNITS (Must equal the number of unit notification pages attached plus the number of CE-CL units.)

IV. CERTIFICATION AND SIGNATURE

aste Minimization - I certify that I have a program in place to reduce the volume, quantity and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment.

Tiered Permitting Certification - I certify that the unit or units described in these documents meet the eligibility and operating requirements of state statutes and regulations for the indicated permitting tier, including generator and secondary containment requirements. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate, and complete.

I am aware that there are substantial penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

SIGNATURE OF OWNER/OPERATOR	DATE 603.
	2·29·2008
NAME OF OWNER/OPERATOR 604.	TITLE OF OWNER/OPERATOR 605.
David McGraw	Associate Laboratory Director / Chief Operating Officer

REQUEST FOR SHORTENED REVIEW PERIOD (CE and CA only) ☐ Yes ☒ No

State Reason for Request:

V. ATTACHMENTS (Check if attached)

ALL tiers except CE-CL (Laundries) must submit:	PBR ONLY
☒ 1. One unit specific notification page and one treatment process page per unit	☒ 1. Tank and container certifications, if required
☒ 2. Plot Plan (or other grid/map)	☐ 2. Notification of local agency or agencies
	☐ 3. Notification of property owner, if different from business owner
PBR & CA ONLY:	
☐ 1. Closure Financial Assurance (formerly DTSC form 1232)	
☐ Self Certified (< $10,000) ☐ Other mechanism	
☒ 2. Prior Enforcement History, if applicable	

Onsite Hazardous Waste Treatment Notification – Facility Form Instructions
(Formerly DTSC Form 1772)

Complete this form if your facility performs onsite treatment of hazardous waste(s) generated onsite and the facility is eligible und the Conditional Exemption (CE), Conditional Authorization (CA), or Fixed Treatment Unit (FTU) Permit by Rule (PBR) tiers.

Submit one Onsite Hazardous Waste Treatment Notification - Facility page per facility, regardless of the number of treatment units located at the site. Attach separate Onsite Hazardous Waste Treatment Notification - Unit and Waste and Treatment Process Combinations pages for each treatment unit at the facility. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

1. FACILITY ID NUMBER - This space is for agency use only.
3. BUSINESS NAME - Enter the complete Facility Name.
600. NOTIFICATION STATUS - Check whether this notification is your initial notification under the Tiered Permitting system; an amended notification; or, for PBR only, a renewal notification.
601. PERMIT STATUS - If this facility has a state-issued hazardous waste permit or grant of authorization, check the appropriate box to indicate the permit status.
602. NUMBER OF UNITS - Enter the number of units you operate at this facility in each permit tier or category.

SIGNATURE OF OWNER/OPERATOR - The business owner, or officer of the company who is authorized to make decisions for the facility and who has operational control, shall sign in the space provided. In most companies, this is not the environmental compliance or technical staff. Original signatures are required.

603. DATE CERTIFIED - Enter the date the form was signed.
604. OWNER/ OPERATOR NAME - Print or type the full name of the person signing the page.
605. OWNER/ OPERATOR TITLE - Enter the title of the person signing the page.

REQUEST FOR SHORTENED REVIEW PERIOD - Generators operating under the PBR tier are not authorized until they are notified by their Certified Unified Program Agency (CUPA). Generators operating under CA and CE are legally authorized 60 days after submitting a complete notification. The time period between notification and authorization may be shortened if the owner or operator shows good cause. Check the appropriate box to indicate whether or not you are requesting to be authorized sooner than the standard 60-day period. If you check "Yes," state the reason(s) for your request (attach additional sheets if needed). Authorizati will be automatically effective on the date the completed notification is received by your CUPA.

ATTACHMENTS - Check the appropriate boxes to indicate that all required document submittals are attached to this form. (*Note: Commercial Laundries are <u>not</u> required to provide attachments.*)

<u>ALL FACILITIES</u>:

1. Complete an Onsite Hazardous Waste Treatment Notification - Unit form and Waste and a Treatment Process Combinations form for each unit covered by this notification.
2. Provide a plot plan or map detailing the location(s) of the unit(s) at this facility. Clearly indicate the facility boundaries and major features. The Storage Map prepared for your Hazardous Materials Business Plan may be used as long as the unit numbers for the units covered by this notification are shown.

<u>PBR and CA ONLY</u>:*

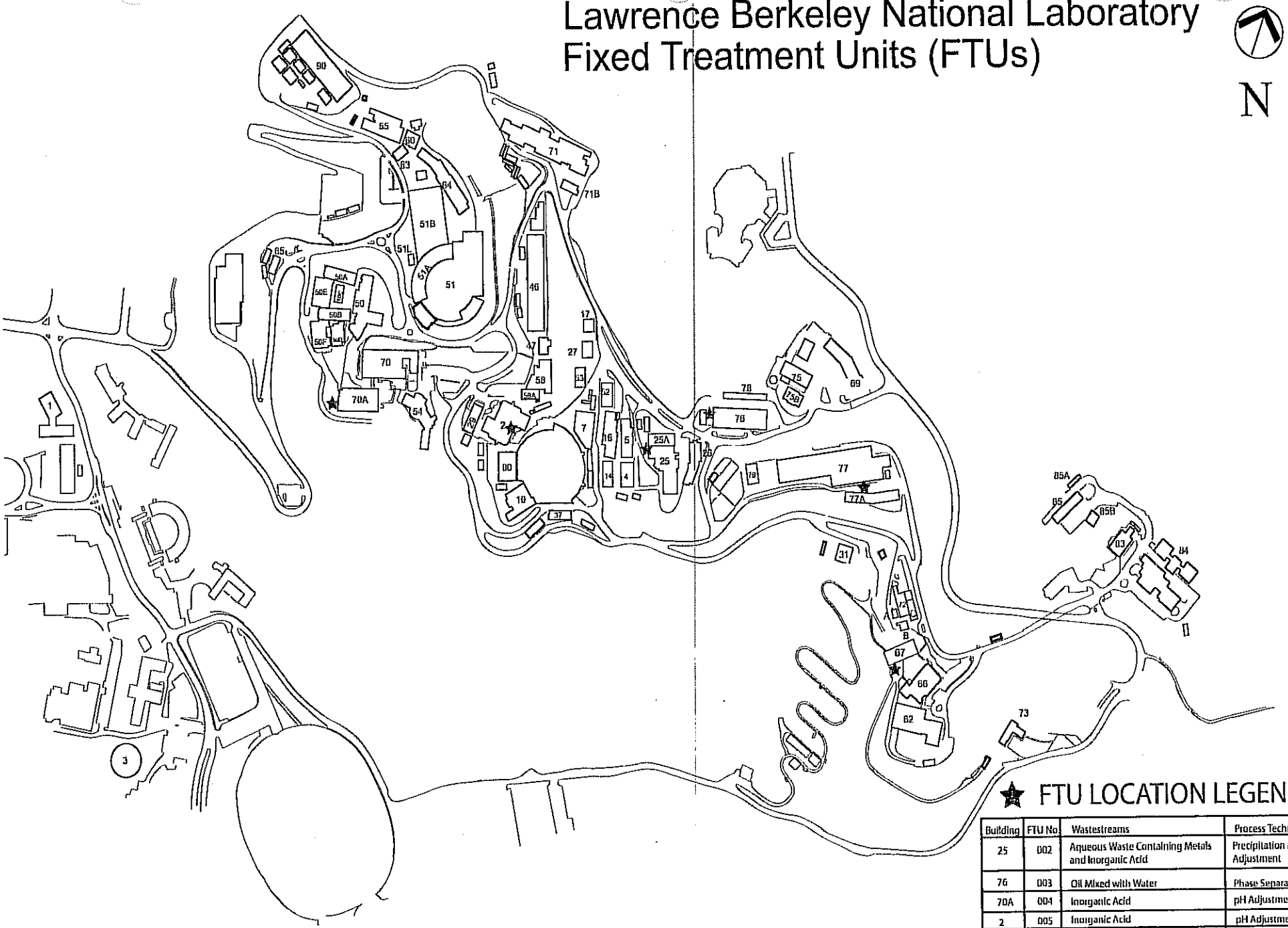
1. Complete and attach the Certification of Financial Assurance for Closure (UPCF form HWF 1232). Check the appropriate box to indicate whether you have Self-Certified (closure costs must be less than $10,000) or are submitting a financial mechanism.
2. Prior Enforcement History information is required only if your facility was the subject of any convictions, judgments, settlements or final orders resulting from an action by any local, state, or federal environmental, hazardous waste, or public health enforcement agency. If applicable, attach a statement or summary that lists the cases for the last three years and provide a copy of the cover sheet from each document (conviction, settlement, etc.). The summary should include case and docket number, name and address of the agency, date, brief explanation, type of case (criminal, civil, administrative) and final resolution (including fines and penalties).

<u>PBR ONLY</u>:

1. 22 CCR §67450.2(b)(3)(G) requires that tank and/or containment system certifications be submitted, when applicable. Specific standards are in 22 CCR §66264.175(c) (containers) and 22 CCR §66265.191(a) and 66265.192(a) (tanks).
2. Notification of local agencies. Attach documentation of the other local agencies notified of your operation. (e.g. sewer agency).
3. Notification of property owner. If the property owner is different than the operator, provide documentation that the facility operator has notified the property owner of the operation of this hazardous waste treatment unit under PBR.

* For PBR and CA, a Phase I environmental assessment must be submitted to DTSC, not to your CUPA. The assessment checklist and instructions are available from DTSC. Call (916) 324-2423 or write to the DTSC-Unified Program Section at 400 P Street, 4th Floor, P.O. Box 806, Sacramento, CA 95182-0806. Completed Phase I assessments should be submitted to the same address.

Lawrence Berkeley National Laboratory
Fixed Treatment Units (FTUs)



FTU LOCATION LEGEND

Building	FTU No.	Wastestreams	Process Technologies
25	002	Aqueous Waste Containing Metals and Inorganic Acid	Precipitation and ph Adjustment
76	003	Oil Mixed with Water	Phase Separation
70A	004	Inorganic Acid	pH Adjustment
2	005	Inorganic Acid	pH Adjustment
77	006	Aqueous Waste Containing Metals and Inorganic Acid	Precipitation and ph Adjustment
67	007	Inorganic Acid and Base	ph Adjustment

UNIFIED PROGRAM CONSOLIDATED FORM
HAZARDOUS WASTE

ONSITE HAZARDOUS WASTE TREATMENT NOTIFICATION – UNIT PAGE

(One page and attachments per unit)

FACILITY ID#	1.	BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As)	3.
		Lawrence Berkeley National Laboratory	

I. TREATMENT UNIT

UNIT ID# 606.	UNIT TYPE/TIER 607.	NUMBER OF TANKS 608.	NUMBER OF CONTAINERS/ TREATMENT AREAS 609.
FTU 002	☐ a. CESQT ☐ b. CESW ☐ c. CA ☒ d. PBR ☐ e. CEL	6	1
UNIT NAME 610.		**MONTHLY TREATMENT VOLUME 611.**	**UNIT OF MEASURE 612.**
Building 25 Electronic Services FTU		3300	☐ a. Pounds ☒ b. Gallons

SPECIFIC WASTE TYPE TREATED (narrative) 613.

Aqueous waste and sludge containing metals listed in 22 CCR 66261.24(a)(2).

TREATMENT PROCESS DESCRIPTION (narrative) 614.

Metals precipitation, pH adjustment, and sludge dewatering. See attached, "Process Description, Electornic Services Fixed Treatment Unit FTU 002" for a a more detailed description of the treatment process.

(NOTE: For each treatment unit, complete and attach the appropriate Waste and Treatment Process Combinations page.)

II. BASIS FOR NOT NEEDING FEDERAL PERMIT (Check all that apply)

615.

☐ a. The treated waste is not a hazardous waste under federal law (California-only waste).

☒ b. Treated in waste water treatment units (tanks) and discharged to a publicly owned treatment works (POTW)/sewering agency or under an NPDES permit.

☐ c. Treatment in elementary neutralization units.

☐ d. Treatment in a totally enclosed treatment facility.

☐ e. Federal conditionally exempt small quantity generator (generated 100 kg., approximately 27 gallons, or less of hazardous waste in a calendar month).

☐ f. Treatment in an accumulation tank or container within 90 days for over 1,000 kg./month generators and 180 or 270 days for generators of 100 to 1,000 kg./month.

☐ g. Recyclable materials are reclaimed to recover silver or other precious metals.

☐ h. Empty container rinsing and/or treatment.

☐ i. Other (specify below)

III. RESIDUALS MANAGEMENT DESCRIPTION (Check all that apply)

☒ a. Discharge non-hazardous aqueous waste to POTW or sewer.

☐ b. Discharge non-hazardous aqueous waste under a NPDES permit.

☐ c. Dispose of non-hazardous solid waste residues at an offsite location.

Residual hazardous waste hauled offsite by a registered hauler. 616.

☐ d. Offsite recycling
☐ e. Thermal treatment
☐ f. Disposal to land
☒ g. Further treatment
☐ h. Other method of disposal (describe below)

SECONDARY CONTAINMENT INSTALLATION DATE (If required) 1987 617.

Onsite Hazardous Waste Treatment Notification – Unit
[(Formerly DTSC Form 1772A,B,C,D,L)]

Complete an Onsite Hazardous Waste Treatment Notification - Unit page and a Waste and Treatment Process Combinations page for each treatment unit operating at this facility. Commercial Laundries are not required to complete unit specific pages, provided that laundering is the only hazardous waste treatment activity conducted by the facility. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

1. FACILITY ID NUMBER - This space is for agency use only.
3. BUSINESS NAME - Enter the complete Facility Name.
606. UNIT ID NUMBER - Enter a unique number for each unit. All unit numbers must be clearly labeled on the plot plan/map.
607. UNIT TYPE / TIER - Check the appropriate box to indicate unit type under the Tiered Permitting program.
608. NUMBER OF TANKS - Enter the number of tanks used in the unit. ["Tank" means a stationary device, designed to contain an accumulation of hazardous waste, which is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) which provide structural support.]
609. NUMBER OF CONTAINERS/TREATMENT AREAS - Enter the number of containers/container treatment areas used in the unit. ["Container" means any device that is open or closed, and portable in which a material can be stored, handled, treated, transported, disposed of, or recycled.] "Treatment Area" is a location set aside and used to treat waste in containers.
610. UNIT NAME - Enter the name of the treatment unit. A treatment unit is defined as a tank, a container, or a combination of tanks or tank systems and/or containers located together that are used in sequence to treat or accumulate one or more compatible hazardous waste streams. The devices are either plumbed together or otherwise linked so as to form one system.
611. MONTHLY TREATMENT VOLUME - Enter the estimated monthly total volume of hazardous waste treated in this unit. If the volume fluctuates significantly by month, enter the maximum volume treated in any month.
612. UNIT OF MEASURE - Check a box to indicate whether the treatment volume unit of measure is pounds or gallons.
613. SPECIFIC WASTE TYPE TREATED - Describe the specific waste type(s) treated (e.g. If the waste qualifies as an aqueous waste with metals or organics, indicate the specific metals or organics).
614. TREATMENT PROCESS DESCRIPTION - Describe the treatment process(es) used. Indicate if the activities are seasonal or periodic.
615. BASIS FOR NOT NEEDING FEDERAL PERMIT - Check the reason(s) that best describe why your onsite treatment unit does not need a federal hazardous waste permit. You must indicate at least one reason to prove your eligibility for the onsite treatment tiers. If you are unsure how these exemptions apply to your operation, contact your Certified Unified Program Agency (CUPA), the DTSC Regional Office closest to you, the U.S. EPA Region IX RCRA Information Line at (415) 744-2074, or the U.S. EPA RCRA Hotline at (800) 424-9346. The eight most common reasons for not needing a federal permit are listed on this form. There is also a space to specify any other reason for exemption and a supporting regulatory citation. The following terms are defined in 40 CFR §260.10:

    Wastewater Treatment Unit - A device which: (1) is part of a wastewater treatment facility regulated under section 402 or 307(b) of the Clean Water Act, and (2) receives and treats or stores an influent wastewater that is a hazardous waste or that generates and accumulates a wastewater treatment sludge that is a hazardous waste or that treats or stores a wastewater treatment sludge which is a hazardous waste, and (3) meets the definition of tank or tank system.

    Elementary Neutralization Unit - A device which (1) is used for neutralizing wastes that are hazardous only because they exhibit the corrosivity characteristic or they are listed only for this reason, and (2) meets the definition of tank, tank system, container, transport vehicle, or vessel.

    Totally Enclosed Treatment Facility - A facility for the treatment of hazardous waste which is directly connected to an industrial production process and which is constructed and operated in a manner which prevents the release of any hazardous waste or any constituent thereof into the environment during treatment.

    NPDES Permit - A permit issued by a regional water board allowing discharge of waste to the environment under the National Pollutant Discharge Elimination System (NPDES).
616. RESIDUALS MANAGEMENT DESCRIPTION - Check the appropriate box(es) to describe how treatment residuals are managed. If box h. is checked, describe the "other" methods in the space provided.
617. SECONDARY CONTAINMENT INSTALLATION DATE - Enter the date the secondary containment was installed.

UNIFIED PROGRAM CONSOLIDATED FORM
ONSITE TIERED PERMITTING
PERMIT BY RULE (PBR) PAGE
WASTE AND TREATMENT PROCESS COMBINATIONS

(One page per treatment unit. Check all that apply)

606. UNIT ID# FTU 002 | 1. Facility ID# | Page 4 of 49

630.

1. Aqueous wastes containing hexavalent chromium may be treated by the following process:
Reduction of hexavalent chromium to trivalent chromium with sodium bisulfite, sodium metabisulfite, sodium thiosulfate, ferrous sulfate, ferrous sulfide or sulfur dioxide provided
☐ a. both pH and addition of the reducing agent are automatically controlled.

2. Aqueous wastes containing metals listed in Title 22, CCR, Section 66261.24 (a)(2) and/or fluoride salts may be treated by the following technologies:
☒ a. pH adjustment or neutralization.
☒ b. Precipitation or crystallization.
☐ c. Phase separation by filtration, centrifugation or gravity settling.
☐ d. Ion exchange.
☐ e. Reverse osmosis.
☐ f. Metallic replacement.
☐ g. Plating the metal onto an electrode.
☐ h. Electrodialysis
☐ i. Electrowinning or electrolytic recovery
☐ j. Chemical stabilization using silicates and/or cementitious types of reactions.
☐ k. Evaporation.
☐ l. Adsorption

3. Aqueous wastes with total organic carbon less than 10% as measured by EPA Method 9060 and less than 1% total volatile organic compounds as measured by EPA Method 8240 may be treated by the following technologies::
☐ a. Phase separation by filtration, centrifugation or gravity settling, but excluding super critical fluid extraction.
☐ b. Adsorption.
☐ c. Distillation.
☐ d. Biological processes conducted in tanks or containers and utilizing naturally occurring microorganisms.
☐ e. Photodegradation using ultraviolet light, with or without the addition of hydrogen peroxide or ozone, provided the treatment is conducted in an enclosed system.
☐ f. Air stripping or steam stripping.

4. Sludges, dusts, solid metal objects and metal workings which contain or are contaminated with metals listed in Title 22, CCR, Section 66261.24 (a)(2) and/or fluoride salts may be treated by the following technologies:
☐ a. Chemical stabilization using silicates and/or cementitious types of reactions.
☒ b. Physical processes which change only the physical properties of the waste such as grinding, shredding, crushing or compacting.
☐ c. Drying to remove water.
☐ d. Separation based on differences in physical properties such as size, magnetism or density.

5. Alum, gypsum, lime, sulfur or phosphate sludges may be treated by the following technologies:
☐ a. Chemical stabilization using silicates and/or cementitious types of reactions.
☐ b. Drying to remove water.
☐ c. Phase separation by filtration, centrifugation or gravity settling.

6. Wastes identified in Title 22, CCR, Section 66261.120, that meet the criteria and requirements for special waste classification in Section 66261.122 may be treated by the following technologies:
☐ a. Chemical stabilization using silicates and/or cementitious types of reactions.
☐ b. Drying to remove water.
☐ c. Phase separation by filtration, centrifugation or gravity settling.
☐ d. Screening to separate components based on size.
☐ e. Separation based on differences in physical properties such as size, magnetism or density.

7. Wastes, except asbestos, which have been classified by the Department as special wastes pursuant to Title 22, CCR, Section 66261.124, may be treated by the following technologies:
☐ a. Chemical stabilization using silicates and/or cementitious types of reactions.
☐ b. Drying to remove water.
☐ c. Phase separation by filtration, centrifugation or gravity settling.
☐ d. Magnetic separation.

8. Inorganic acid or alkaline wastes may be treated by the following technology:
☐ a. pH adjustment or neutralization.

9. Soils contaminated with metals listed in Title 22, CCR, Section 66261.24(a)(2), (Persistent and Bioaccumulative Toxic Substances) may be treated by the following technologies:
☐ a. Chemical stabilization using silicates and/or cementitious types of reactions.
☐ b. Screening to separate components based on size.
☐ c. Magnetic separation.

10. Used oil, unrefined oil waste, mixed oil, oil mixed with water and oil/water separation sludges may be treated by the following technologies:
☐ a. Phase separation by filtration, centrifugation or gravity settling, but excluding super critical fluid extraction.
☐ b. Distillation.
☐ c. Neutralization.
☐ d. Separation based on differences in physical properties such as size, magnetism or density.
☐ e. Reverse osmosis.
☐ f. Biological processes conducted in tanks or containers and utilizing naturally occurring microorganisms.

11. Containers of 110 gallons or less capacity which are not constructed of wood, paper, cardboard, fabric, or any other similar absorptive material, which have been emptied as specified in Title 40 of the Code of Federal Regulations, section 261.7 or inner liners removed from empty containers that once held hazardous waste or hazardous material and which are not excluded from regulation may be treated by the following technologies provided the treated containers and rinseate are managed in compliance with applicable requirements.
☐ a. Rinsing with a suitable liquid capable of dissolving or removing the hazardous constituents which the container held.
☐ b. Physical processes such as crushing, shredding, grinding or puncturing, that change only the physical properties of the container or inner liner, provided the container or inner liner is first rinsed and the rinseate is removed from the container or inner liner.

12. Multi-component resins may be treated by the following process:
☐ a. Mixing the resin components in accordance with the manufacturer's instructions.

13. A waste stream technology combination certified by the Department pursuant to Section 25200.1.5 of the Health and Safety Code as appropriate for authorization under Permit by Rule.
☐ Certified Technology Number: _____

Waste and Treatment Process Combinations Form PBR Instructions
(Formerly DTSC Form 1772D)

This Waste and Treatment Process Combinations page lists those waste and treatment combinations certified by the Department of Toxic Substances Control (DTSC) pursuant to Health and Safety Code (H&SC) §25200.1.5 for authorization under the Permit by Rule (PBR) tier. (Note: Reactive and extremely hazardous wastes are not allowed to be treated under this tier.)

Complete a separate Waste and Treatment Process Combinations page for each unit. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

606. UNIT ID NUMBER - Enter the unit ID number (same as item 606 from the Onsite Hazardous Waste Treatment Notification - Unit form).

1. FACILITY ID NUMBER - This space is for agency use only.

630. WASTE AND TREATMENT PROCESS COMBINATIONS (PBR) - Use this page only for a PBR unit. Check the appropriate boxes to indicate the waste and treatment process(es) that pertain to the unit. If the process is a technology certified by DTSC, enter the Certified Technology Number (Cert. #). Certified technologies appropriate for authorization, and the eligible tiers, are listed below.

CERTIFIED TECHNOLOGIES

DTSC is authorized to certify hazardous waste technologies. Appropriate certified technologies may be eligible for the CE, CA or PBR onsite treatment tiers. As of April 1, 1999, there is one certified technology for these tiers. The certification is for aldehyde treatment processes and is eligible for the CESW tier. The approved technology is:

Technology	Vendor	Cert. #	Effective Date	Tier	Description
Neutralex	Scigen 333 East Gardena Blvd. Gardena, CA 90248	97-01-0024	629/97 (expires 6/29/00)	CESW	Batch treatment for 10 percent Formalin generated by medical, educational, and laboratory facilities. Chemically treats in a provided 8 liter vessel. After testing, allows for disposal to sanitary sewer.

A copy of published Certification Statements and additional updates may be obtained by contacting DTSC at (916) 322-3670 or from the Cal/EPA on-line Bulletin Board via modem at (916) 322-5041.

PROCESS DESCRIPTION
ELECTRONIC SERVICES FIXED TREATMENT UNIT FTU 002
LBL - BUILDING 25

PhotoFabrication and Silk-Screening facilities, provides a variety of electronic assembly and photo fabrication services for the LBL community. These services include: manufacture of rigid and flexible printed circuit boards, Silk-screening of equipment panels, photo imaging, etching, and electroless metal plating.

The printed circuit board, plating, chemical milling(etching) and silk screening process discharges wastewater into the Fixed Treatment Unit FTU 002 located at Building 25. Also, there are two sinks which are connected to FTU 002. A maximum of 2,500 gallons per month of wastewater from these processes are treated in FTU 002.
The chemical rinse water process which discharge directly into FTU 002 include:

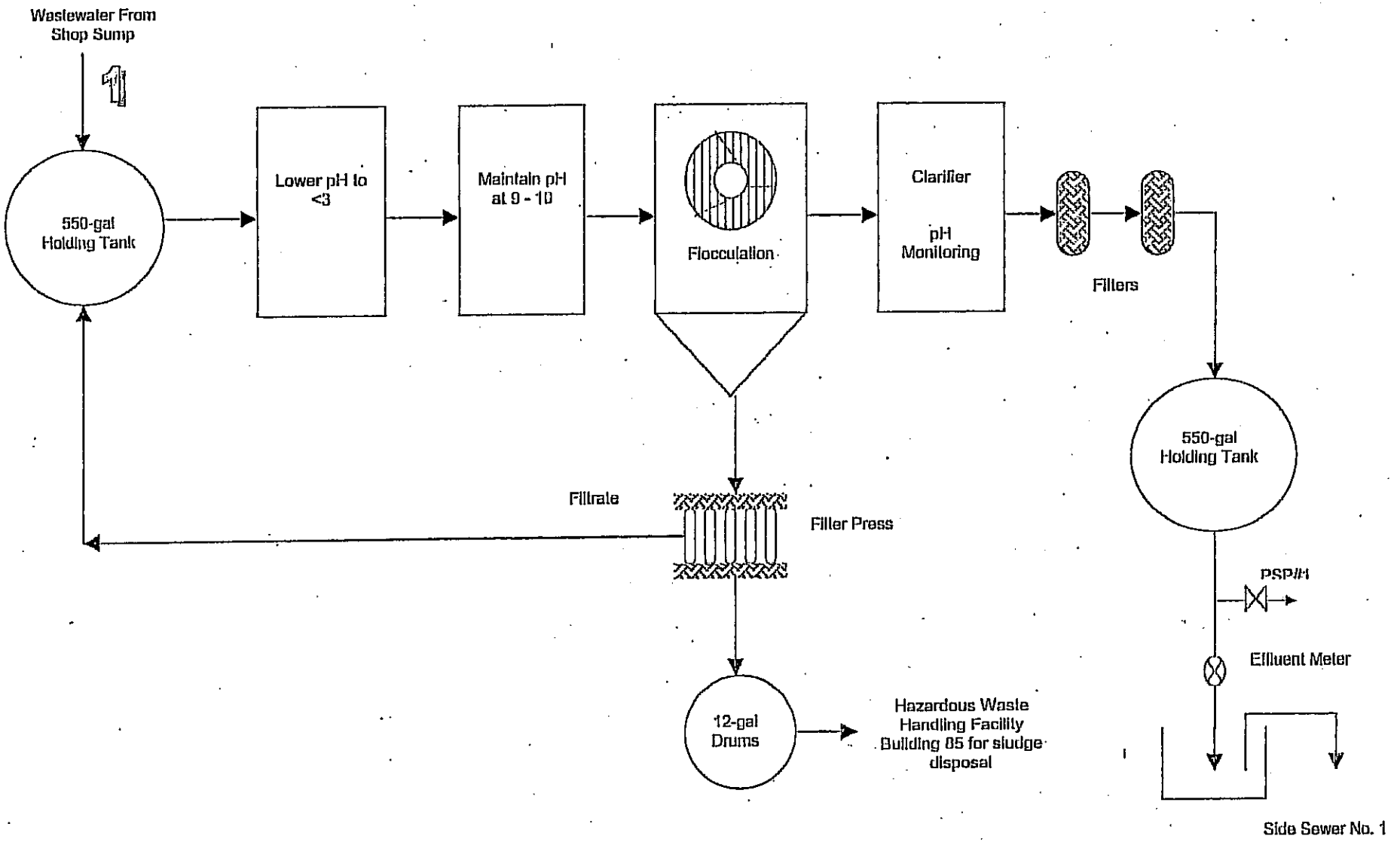
- AFR-2 cleaner, rinse water
- Micro Etch ND, rinse water
- Pre-catalyst dip, rinse water
- Deburring machine
- Electroless copper, nickel and gold rinse water
- Riston stripper
- Silk Screen cleaning solutions
- Developing Ulano film

The wastewaters from the above process and sinks flow into a sump. From the sump the wastewater is pumped into a 550-gallon holding tank. The 550-gallon holding tank provides equalization and allows the fixed treatment unit (FTU 002) to be operated on a batch basis (as often as twice per month). Sulfuric acid is added to lower the pH to <3. Ferric chloride is added to help precipitate heavy metals and sodium hydroxide are then added to neutralize the wastewater.

A polyelectrolyte coagulant is added to aid in the flocculation of the metal precipitate in the flocculation chamber. The wastewater is then clarified and filtered.

After the treatment process is complete treated rinse water is collected in a 550 gallon holding tank. The treated water in the holding tank is analyzed by a trained personnel. If the results show that the treated water meets in-house standards then the treated water is discharged to the local Publicly Owned Treatment Works (POTW) which is the East Bay Municipal Utility District (EBMUD). If the treated water does not meet in-house standards (approximately one-half of EBMUD's discharge limits) then the water is passed through the treatment process a second time.

This treatment process generates a sludge which contains metals. The sludge is dewatered in a filter press. The filter cake, a residual hazardous waste, typically contains copper, lead, nickel, and zinc. The filter cake is collected in a 12-gallon drum for transportation off-site by a registered hazardous waste hauler.



Building 25 FTU 002 Wastewater Treatment Process

TRC
Environmental Solutions through Technology

TRC Environmental Corporation
1201 North McDowell Boulevard
Petaluma, CA 94954
☎ (707) 769-5250 Fax (707) 762-3614

June 29, 1993

University of California
Lawrence Berkeley Laboratory for the U.S. Department of Energy
Environmental Protection Group
Building B75B
Berkeley, California 94720

Attention: Mr. Robert Fox

Tank Certification Report for Building 25 - FTU 002.
EPA ID Number: CA 4890008986

Dear Mr. Fox,

An inspection of the Waste Treatment Tank (Building 25) and associated plumbing and containment structures has been conducted by TRC Environmental Corporation on several occasions between February 25, 1993 and June 29, 1993. The tanks, piping systems, containment systems, pumps, and other control devices were observed.

Based on these inspections, a review of available drawings and design information, and subsequent calculations, the following certification is made. Because the tank was in operation prior to July 14, 1986, this certification is being made pursuant to CCR Section 66265.191, - "Assessment of Existing Tank System's Integrity."

Title 22, Code of California Regulations (CCR):
Section 66264.191(a) Tank System Integrity

Based upon visual observations of the base metal during coating/preparation operations, observations made during the coating operations, coating thickness tests after application of the new coating, and a static water level test, the treatment tank has sufficient integrity to contain the materials to be treated in the tank.

Section 66265.191(b)(1) Design Standards

Appears to meet regulatory requirements per visual inspection and limited design document review.

Section 66265.191(b)(2) Hazardous Characteristics of Waste

The systems is compatible with the intended wastes from the plating and circuit board manufacturing operations in the adjacent building 25. A review of the coating manufacturers specifications indicate that the coating is compatible with the wastes intended for treatment.

Section 66265.191(b)(3) Corrosion Protection

Appears to meet regulatory requirements per visual inspection and limited design document review. Inspections were also performed during tank coating operations. The base metal appeared to have integrity and a review of the manufacturers coating specifications indicate that the coating should provide very good to excellent corrosion protection for the materials to be treated in the tank.

Section 66265.191(b)(4) Age of Tank System

Based upon discussions with laboratory personal and a review of construction documents, the tank was installed during March, 1986.

Section 66265.191(b)(5) Leak Test and Inspection Results

Based upon visual observations of the base metal during coating/preparation operations, observations made during the coating operations, coating thickness tests after application of the new coating, and a static water level test, the treatment tank has sufficient integrity to contain the materials to be treated in the tank. Visual observations included an inspection for the following items:

(1) weld breaks;
(2) punctures;
(3) scrapes of protective coatings;
(4) cracks;
(5) corrosion;
(6) other structural damage or inadequate construction or installation.

During inspections and the static water level test the tank appeared to meet regulatory requirements.

Based on my personal observations and review of supporting materials provided to me by staff at LBL, I attest that the system has sufficient structural integrity, is acceptable for the transferring, storing, and treating of hazardous waste, and that the tanks are suitably designed to achieve the requirements of Article 10, Title 22, CCR.

I certify under penalty of law that this document was prepared under my direct supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to be the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,
TRC Environmental Corporation

Robert M. Boggs, P.E.
Senior Chemical Engineer
Registered Professional Engineer
California Certificate No. CH 4625

13821015.001

UNIFIED PROGRAM CONSOLIDATED FORM
HAZARDOUS WASTE

ONSITE HAZARDOUS WASTE TREATMENT NOTIFICATION – UNIT PAGE

(One page and attachments per unit)

FACILITY ID#	1.	BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As)	3.
		Lawrence Berkeley National Laboratory	

I. TREATMENT UNIT

UNIT ID# 606.	UNIT TYPE/TIER 607.	NUMBER OF TANKS 608.	NUMBER OF CONTAINERS/ TREATMENT AREAS 609.
FTU 003	☐ a. CESQT ☐ b. CESW ☒ c. CA ☐ d. PBR ☐ e. CEL	5	0
UNIT NAME 610.		**MONTHLY TREATMENT VOLUME 611.**	**UNIT OF MEASURE 612.**
Building 76		5,600	☐ a. Pounds ☒ b. Gallons

SPECIFIC WASTE TYPE TREATED (narrative) 613.

Oil mixed with water is generated from washing cars, trucks, and buses.

TREATMENT PROCESS DESCRIPTION (narrative) 614.

Phase separation by gravity settling.

(NOTE: For each treatment unit, complete and attach the appropriate Waste and Treatment Process Combinations page.)

II. BASIS FOR NOT NEEDING FEDERAL PERMIT (Check all that apply)

615.

☒ a. The treated waste is not a hazardous waste under federal law (California-only waste).

☒ b. Treated in waste water treatment units (tanks) and discharged to a publicly owned treatment works (POTW)/sewering agency or under an NPDES permit.

☐ c. Treatment in elementary neutralization units.

☐ d. Treatment in a totally enclosed treatment facility.

☐ e. Federal conditionally exempt small quantity generator (generated 100 kg., approximately 27 gallons, or less of hazardous waste in a calendar month).

☐ f. Treatment in an accumulation tank or container within 90 days for over 1,000 kg./month generators and 180 or 270 days for generators of 100 to 1,000 kg./month.

☐ g. Recyclable materials are reclaimed to recover silver or other precious metals.

☐ h. Empty container rinsing and/or treatment.

☐ i. Other (specify below)

III. RESIDUALS MANAGEMENT DESCRIPTION (Check all that apply)

616.

☒ a. Discharge non-hazardous aqueous waste to POTW or sewer.

☐ b. Discharge non-hazardous aqueous waste under a NPDES permit.

☐ c. Dispose of non-hazardous solid waste residues at an offsite location.

Residual hazardous waste hauled offsite by a registered hauler.

☐ d. Offsite recycling
☐ e. Thermal treatment
☒ f. Disposal to land
☒ g. Further treatment
☐ h. Other method of disposal (describe below)

617.

SECONDARY CONTAINMENT INSTALLATION DATE (If required) 1991

Onsite Hazardous Waste Treatment Notification – Unit
[(Formerly DTSC Form 1772A,B,C,D,L)]

Complete an Onsite Hazardous Waste Treatment Notification - Unit page and a Waste and Treatment Process Combinations page f each treatment unit operating at this facility. Commercial Laundries are not required to complete unit specific pages, provided t laundering is the only hazardous waste treatment activity conducted by the facility. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

1. FACILITY ID NUMBER - This space is for agency use only.
3. BUSINESS NAME - Enter the complete Facility Name.
606. UNIT ID NUMBER - Enter a unique number for each unit. All unit numbers must be clearly labeled on the plot plan/map.
607. UNIT TYPE / TIER - Check the appropriate box to indicate unit type under the Tiered Permitting program.
608. NUMBER OF TANKS - Enter the number of tanks used in the unit. ["Tank" means a stationary device, designed to contain an accumulation of hazardous waste, which is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) which provide structural support.]
609. NUMBER OF CONTAINERS/TREATMENT AREAS - Enter the number of containers/container treatment areas used in the unit. ["Container" means any device that is open or closed, and portable in which a material can be stored, handled, treated, transported, disposed of, or recycled.] "Treatment Area" is a location set aside and used to treat waste in containers.
610. UNIT NAME - Enter the name of the treatment unit. A treatment unit is defined as a tank, a container, or a combination of tanks or tank systems and/or containers located together that are used in sequence to treat or accumulate one or more compatible hazardous waste streams. The devices are either plumbed together or otherwise linked so as to form one system.
611. MONTHLY TREATMENT VOLUME - Enter the estimated monthly total volume of hazardous waste treated in this unit. If the volume fluctuates significantly by month, enter the maximum volume treated in any month.
612. UNIT OF MEASURE - Check a box to indicate whether the treatment volume unit of measure is pounds or gallons.
613. SPECIFIC WASTE TYPE TREATED - Describe the specific waste type(s) treated (e.g. If the waste qualifies as an aqueous waste with metals or organics, indicate the specific metals or organics).
614. TREATMENT PROCESS DESCRIPTION - Describe the treatment process(es) used. Indicate if the activities are seasonal or periodic.
615. BASIS FOR NOT NEEDING FEDERAL PERMIT - Check the reason(s) that best describe why your onsite treatment unit does not need a federal hazardous waste permit. You must indicate at least one reason to prove your eligibility for the onsite treatment tiers. If you are unsure how these exemptions apply to your operation, contact your Certified Unified Program Agen (CUPA), the DTSC Regional Office closest to you, the U.S. EPA Region IX RCRA Information Line at (415) 744-2074, or t U.S. EPA RCRA Hotline at (800) 424-9346. The eight most common reasons for not needing a federal permit are listed on this form. There is also a space to specify any other reason for exemption and a supporting regulatory citation. The following terms are defined in 40 CFR §260.10:

    Wastewater Treatment Unit - A device which: (1) is part of a wastewater treatment facility regulated under section 402 or 307(b) of the Clean Water Act, and (2) receives and treats or stores an influent wastewater that is a hazardous waste or that generates and accumulates a wastewater treatment sludge that is a hazardous waste or that treats or stores a wastewater treatment sludge which is a hazardous waste, and (3) meets the definition of tank or tank system.

    Elementary Neutralization Unit - A device which (1) is used for neutralizing wastes that are hazardous only because they exhibit the corrosivity characteristic or they are listed only for this reason, and (2) meets the definition of tank, tank system, container, transport vehicle, or vessel.

    Totally Enclosed Treatment Facility - A facility for the treatment of hazardous waste which is directly connected to an industrial production process and which is constructed and operated in a manner which prevents the release of any hazardous waste or any constituent thereof into the environment during treatment.

    NPDES Permit - A permit issued by a regional water board allowing discharge of waste to the environment under the National Pollutant Discharge Elimination System (NPDES).
616. RESIDUALS MANAGEMENT DESCRIPTION - Check the appropriate box(es) to describe how treatment residuals are managed. If box h. is checked, describe the "other" methods in the space provided.
617. SECONDARY CONTAINMENT INSTALLATION DATE - Enter the date the secondary containment was installed.

UNIFIED PROGRAM CONSOLIDATED FORM
ONSITE TIERED PERMITTING
CONDITIONALLY AUTHORIZED (CA) PAGE
WASTE AND TREATMENT PROCESS COMBINATIONS

(One page per treatment unit. Check all that apply)

606. UNIT ID# FTU 003 | 1. Facility ID# | Page 11 of 49

629.

1. Aqueous wastes, hazardous solely due to inorganic constituents, except asbestos, listed in Title 22, CCR, Section 66261.24(a)(1)(B) or (a)(2)(A) and which contain less than 1,400 ppm total of these constituents. (There is no volume limit for this wastestream.) Treatment using:
   - ☐ a. Phase separation, including precipitation, by filtration, centrifugation, or gravity settling, including the use of demulsifiers and flocculants.
   - ☐ b. Ion exchange, including metallic replacement.
   - ☐ c. Reverse osmosis.
   - ☐ d. Adsorption.
   - ☐ e. pH adjustment of aqueous waste with a pH of between 2.0 and 12.5.
   - ☐ f. Electrowinning of solutions, unless those solutions contain hydrochloric acid.
   - ☐ g. Reduction of solutions hazardous solely due to hexavalent chromium, to trivalent chromium with sodium bisulfite, sodium metabisulfite, sodium thiosulfate, ferrous chloride, ferrous sulfate, ferrous sulfide, or sulfur dioxide. The solution contains less than 750 ppm of hexavalent chromium.

2. Aqueous wastes, hazardous solely due to organic constituents listed in Title 22, CCR, Section 66261.24(a)(1)(B) or (2)(B) and which contain less than 750 ppm total of these constituents. (There is no volume limit for this wastestream.) Treatment using:
   - ☐ a. Phase separation by filtration, centrifugation, or gravity settling, but excluding super critical fluid extraction.
   - ☐ b. Adsorption.

3. Sludges resulting from wastewater treatment, dusts, solid metal objects, and metal workings which are hazardous solely due to the presence of constituents, except asbestos, listed in Title 22, CCR, Section 66261.24(a)(1)(B) or (a)(2)(A) and which, for dusts only, contain less than 750 ppm total of these constituents. The monthly volume treated in this unit does not exceed 5,000 gallons or 45,000 pounds. Treatment using:
   - ☐ a. Physical processes which constitute treatment only because they change the physical properties of the waste, such as filtration, centrifugation, gravity settling, grinding, shredding, crushing, or compacting.
   - ☐ b. Drying to remove water.
   - ☐ c. Separation based on differences in physical properties, such a size, magnetism, or density.

4. Alum, gypsum, lime, sulfur, or phosphate sludges. The monthly volume treated in this unit does not exceed 5,000 gallons or 45,000 pounds. Treatment using:
   - ☐ a. Drying to remove water.
   - ☐ b. Phase separation by filtration, centrifugation, or gravity settling.

5. Special wastes listed in Title 22, CCR, Section 66261.120 that meet the criteria in Title 22, CCR, Section 66261.122 which is hazardous solely due to the constituents, except asbestos, listed in Title 22, CCR, Section 66261.24(a)(1)(B) or (a)(2)(A) and which contain less than 750 ppm total of these constituents. The monthly volume treated in this unit does not exceed 5,000 gallons or 45,000 pounds. Treatment using:
   - ☐ a. Drying to remove water.
   - ☐ b. Phase separation by filtration, centrifugation, or gravity settling.
   - ☐ c. Screening to separate components based on size.
   - ☐ d. Separation based on differences in physical properties, such as size, magnetism, or density.

6. Special wastes classified under Title 22, CCR, Section 66261.124 as special wastes, except asbestos, which is hazardous solely due to the constituents, except asbestos, listed in Title 22, CCR, Section 66261.24(a)(1)(B) or (a)(2)(A) and which contain less than 750 ppm total of these constituents. The monthly volume treated in this unit does not exceed 5,000 gallons or 45,000 pounds. Treatment using:
   - ☐ a. Drying to remove water.
   - ☐ b. Phase separation by filtration, centrifugation, or gravity settling.
   - ☐ c. Magnetic separation.

7. Soils contaminated with metals listed in Title 22, CCR, Section 66261.24(a)(2)(A). The monthly volume treated in this unit does not exceed 5,000 gallons or 45,000 pounds. Treatment using:
   - ☐ a. Screening to separate components based on size.
   - ☐ b. Magnetic separation.

8. Oil mixed with water and oil/water separation sludges. (There is no volume limit for this wastestream.) Treatment using: (NOTE: Some used oil/water separation is allowed under the CEL category.)
   - ☒ a. Phase separation by filtration, centrifugation, or gravity settling, but excluding super critical fluid extraction, including the use of demulsifiers and flocculants. Heat can be used, but must not exceed 160 degrees Fahrenheit.
   - ☐ b. Separation based on differences in physical properties, such a size, magnetism, or density.
   - ☐ c. Reverse osmosis.

9. Neutralization of acidic or alkaline wastes, hazardous solely due to corrosivity, or toxic only from the acid or caustic material, in elementary neutralization units. (There is no volume limit for this wastestream.)
   - ☐ a. The waste contains less than 10 percent acid or base constituents by weight. There is no volume limit for this category.
   - ☐ b. The waste contains 10 percent or more acid or base constituents by weight and is treated in batches that do not exceed 500 gallons at one time.

10. Not in use/exempted — formerly recovery of silver from photofinishing.

11. Not in use/sunsetted — formerly treatment of spent cleaners and conditioners which are hazardous solely due to copper or copper compounds. Treatment of this wastestream is no longer allowed under Conditional Authorization as of January 1, 1998. Treatment of this wastestream now requires authorization under either Permit by Rule or, if the total volume treated is less than 55 gallons per month, under Conditionally Exempt Small Quantity Treatment.

A waste stream technology combination certified by the Department pursuant to Section 25200.1.5 of the Health and Safety Code as appropriate for authorization under Conditional Authorization.

☐ Certified Technology Number: _____

Waste and Treatment Process Combinations Form CA Instructions
(Formerly DTSC Form 1772C)

This Waste and Treatment Process Combinations page lists those waste and treatment combinations certified by the Department of Toxic Substances Control (DTSC) pursuant to Health and Safety Code (H&SC) §25200.1.5 for authorization under the Conditionally Authorized (CA) tier. [Note: 1.) Reactive and extremely hazardous wastes are not allowed to be treated under this tier; 2.) Except for dilute aqueous waste and oily waste, volume of hazardous waste treated must not exceed 5,000 gallons (45,000 pounds) per month.]

Complete a separate Waste and Treatment Process Combinations page for each unit. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

606. UNIT ID NUMBER - Enter the unit ID number (same as item 606 from the Onsite Hazardous Waste Treatment Notification - Unit form).

1. FACILITY ID NUMBER - This space is for agency use only.

629. WASTE AND TREATMENT PROCESS COMBINATIONS (CA) - Use this page only for a CA unit. Check the appropriate boxes to indicate the waste and treatment process(es) that pertain to the unit. If the process is a technology certified by DTSC, enter the Certified Technology Number (Cert. #). Certified technologies appropriate for authorization, and the eligible tiers, are listed below.

CERTIFIED TECHNOLOGIES

DTSC is authorized to certify hazardous waste technologies. Appropriate certified technologies may be eligible for the CE, CA or PBR onsite treatment tiers. As of April 1, 1999, there is one certified technology for these tiers. The certification is for aldehyde treatment processes and is eligible for the CESW tier. The approved technology is:

Technology	Vendor	Cert. #	Effective Date	Tier	Description
Neutralex	Scigen 333 East Gardena Blvd. Gardena, CA 90248	97-01-0024	629/97 (expires 6/29/00)	CESW	Batch treatment for 10 percent Formalin generated by medical, educational, and laboratory facilities. Chemically treats in a provided 8 liter vessel. After testing, allows for disposal to sanitary sewer.

A copy of published Certification Statements and additional updates may be obtained by contacting DTSC at (916) 322-3670 or from the Cal/EPA on-line Bulletin Board via modem at (916) 322-5041.

UNIFIED PROGRAM CONSOLIDATED FORM
HAZARDOUS WASTE

ONSITE HAZARDOUS WASTE TREATMENT NOTIFICATION – UNIT PAGE

(One page and attachments per unit)

FACILITY ID#	1.	BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As)	3.
		Lawrence Berkeley National Laboratory	

I. TREATMENT UNIT

UNIT ID# 606.	UNIT TYPE/TIER 607.	NUMBER OF TANKS 608.	NUMBER OF CONTAINERS/ TREATMENT AREAS 609.
FTU 004	☐ a. CESQT ☐ b. CESW ☒ c. CA ☐ d. PBR ☐ e. CEL	6	0
UNIT NAME 610.		**MONTHLY TREATMENT VOLUME 611.**	**UNIT OF MEASURE 612.**
Building 70A and 70F FTU		160,000	☐ a. Pounds ☒ b. Gallons

SPECIFIC WASTE TYPE TREATED (narrative) 613.

Acidic wastes are generated in various laboratories in Building 70A. Acids that are discharged include: hydrochloric acid, phosphoric acid, sulfuric acid, acetic acid, nitric acid, and other acids. A complete listing is found in the attachment, "Waste Stream Survey, Building 70A Waste Treatment System."

TREATMENT PROCESS DESCRIPTION (narrative) 614.

Neutralization of acidic wastes by elementry neutralization with sodium hydroxide.

(NOTE: For each treatment unit, complete and attach the appropriate Waste and Treatment Process Combinations page.)

II. BASIS FOR NOT NEEDING FEDERAL PERMIT (Check all that apply)

☐ a. The treated waste is not a hazardous waste under federal law (California-only waste).

☒ b. Treated in waste water treatment units (tanks) and discharged to a publicly owned treatment works (POTW)/sewering agency or under an NPDES permit.

☒ c. Treatment in elementary neutralization units.

☐ d. Treatment in a totally enclosed treatment facility.

☐ e. Federal conditionally exempt small quantity generator (generated 100 kg., approximately 27 gallons, or less of hazardous waste in a calendar month).

☐ f. Treatment in an accumulation tank or container within 90 days for over 1,000 kg./month generators and 180 or 270 days for generators of 100 to 1,000 kg./month. 615.

☐ g. Recyclable materials are reclaimed to recover silver or other precious metals.

☐ h. Empty container rinsing and/or treatment.

☐ i. Other (specify below)

III. RESIDUALS MANAGEMENT DESCRIPTION (Check all that apply)

☒ a. Discharge non-hazardous aqueous waste to POTW or sewer.

☐ b. Discharge non-hazardous aqueous waste under a NPDES permit.

☐ c. Dispose of non-hazardous solid waste residues at an offsite location.

Residual hazardous waste hauled offsite by a registered hauler. 616.

☐ d. Offsite recycling
☐ e. Thermal treatment
☐ f. Disposal to land
☐ g. Further treatment
☐ h. Other method of disposal (describe below)

SECONDARY CONTAINMENT INSTALLATION DATE (If required) 1992 617.

Onsite Hazardous Waste Treatment Notification – Unit
[(Formerly DTSC Form 1772A,B,C,D,L)]

Complete an Onsite Hazardous Waste Treatment Notification - Unit page and a Waste and Treatment Process Combinations page f each treatment unit operating at this facility. Commercial Laundries are not required to complete unit specific pages, provided t laundering is the only hazardous waste treatment activity conducted by the facility. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

1. FACILITY ID NUMBER - This space is for agency use only.
3. BUSINESS NAME - Enter the complete Facility Name.
606. UNIT ID NUMBER - Enter a unique number for each unit. All unit numbers must be clearly labeled on the plot plan/map.
607. UNIT TYPE / TIER - Check the appropriate box to indicate unit type under the Tiered Permitting program.
608. NUMBER OF TANKS - Enter the number of tanks used in the unit. ["Tank" means a stationary device, designed to contain an accumulation of hazardous waste, which is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) which provide structural support.]
609. NUMBER OF CONTAINERS/TREATMENT AREAS - Enter the number of containers/container treatment areas used in the unit. ["Container" means any device that is open or closed, and portable in which a material can be stored, handled, treated, transported, disposed of, or recycled.] "Treatment Area" is a location set aside and used to treat waste in containers.
610. UNIT NAME - Enter the name of the treatment unit. A treatment unit is defined as a tank, a container, or a combination of tanks or tank systems and/or containers located together that are used in sequence to treat or accumulate one or more compatible hazardous waste streams. The devices are either plumbed together or otherwise linked so as to form one system.
611. MONTHLY TREATMENT VOLUME - Enter the estimated monthly total volume of hazardous waste treated in this unit. If the volume fluctuates significantly by month, enter the maximum volume treated in any month.
612. UNIT OF MEASURE - Check a box to indicate whether the treatment volume unit of measure is pounds or gallons.
613. SPECIFIC WASTE TYPE TREATED - Describe the specific waste type(s) treated (e.g. If the waste qualifies as an aqueous waste with metals or organics, indicate the specific metals or organics).
614. TREATMENT PROCESS DESCRIPTION - Describe the treatment process(es) used. Indicate if the activities are seasonal or periodic.
615. BASIS FOR NOT NEEDING FEDERAL PERMIT - Check the reason(s) that best describe why your onsite treatment unit does not need a federal hazardous waste permit. You must indicate at least one reason to prove your eligibility for the onsite treatment tiers. If you are unsure how these exemptions apply to your operation, contact your Certified Unified Program Agen (CUPA), the DTSC Regional Office closest to you, the U.S. EPA Region IX RCRA Information Line at (415) 744-2074, or t U.S. EPA RCRA Hotline at (800) 424-9346. The eight most common reasons for not needing a federal permit are listed on this form. There is also a space to specify any other reason for exemption and a supporting regulatory citation. The following terms are defined in 40 CFR §260.10:

    Wastewater Treatment Unit - A device which: (1) is part of a wastewater treatment facility regulated under section 402 or 307(b) of the Clean Water Act, and (2) receives and treats or stores an influent wastewater that is a hazardous waste or that generates and accumulates a wastewater treatment sludge that is a hazardous waste or that treats or stores a wastewater treatment sludge which is a hazardous waste, and (3) meets the definition of tank or tank system.

    Elementary Neutralization Unit - A device which (1) is used for neutralizing wastes that are hazardous only because they exhibit the corrosivity characteristic or they are listed only for this reason, and (2) meets the definition of tank, tank system, container, transport vehicle, or vessel.

    Totally Enclosed Treatment Facility - A facility for the treatment of hazardous waste which is directly connected to an industrial production process and which is constructed and operated in a manner which prevents the release of any hazardous waste or any constituent thereof into the environment during treatment.

    NPDES Permit - A permit issued by a regional water board allowing discharge of waste to the environment under the National Pollutant Discharge Elimination System (NPDES).
616. RESIDUALS MANAGEMENT DESCRIPTION - Check the appropriate box(es) to describe how treatment residuals are managed. If box h. is checked, describe the "other" methods in the space provided.
617. SECONDARY CONTAINMENT INSTALLATION DATE - Enter the date the secondary containment was installed.

UNIFIED PROGRAM CONSOLIDATED FORM
ONSITE TIERED PERMITTING

CONDITIONALLY AUTHORIZED (CA) PAGE

WASTE AND TREATMENT PROCESS COMBINATIONS

(One page per treatment unit. Check all that apply)

606. UNIT ID# FTU 004	1. Facility ID#	Page 13 of 49

629.

1. Aqueous wastes, hazardous solely due to inorganic constituents, except asbestos, listed in Title 22, CCR, Section 66261.24(a)(1)(B) or (a)(2)(A) and which contain less than 1,400 ppm total of these constituents. (There is no volume limit for this wastestream.) Treatment using:
   - ☐ a. Phase separation, including precipitation, by filtration, centrifugation, or gravity settling, including the use of demulsifiers and flocculants.
   - ☐ b. Ion exchange, including metallic replacement.
   - ☐ c. Reverse osmosis.
   - ☐ d. Adsorption.
   - ☐ e. pH adjustment of aqueous waste with a pH of between 2.0 and 12.5.
   - ☐ f. Electrowinning of solutions, unless those solutions contain hydrochloric acid.
   - ☐ g. Reduction of solutions hazardous solely due to hexavalent chromium, to trivalent chromium with sodium bisulfite, sodium metabisulfite, sodium thiosulfate, ferrous chloride, ferrous sulfate, ferrous sulfide, or sulfur dioxide. The solution contains less than 750 ppm of hexavalent chromium.

2. Aqueous wastes, hazardous solely due to organic constituents listed in Title 22, CCR, Section 66261.24(a)(1)(B) or (2)(B) and which contain less than 750 ppm total of these constituents. (There is no volume limit for this wastestream.) Treatment using:
   - ☐ a. Phase separation by filtration, centrifugation, or gravity settling, but excluding super critical fluid extraction.
   - ☐ b. Adsorption.

3. Sludges resulting from wastewater treatment, dusts, solid metal objects, and metal workings which are hazardous solely due to the presence of constituents, except asbestos, listed in Title 22, CCR, Section 66261.24(a)(1)(B) or (a)(2)(A) and which, for dusts only, contain less than 750 ppm total of these constituents. The monthly volume treated in this unit does not exceed 5,000 gallons or 45,000 pounds. Treatment using:
   - ☐ a. Physical processes which constitute treatment only because they change the physical properties of the waste, such as filtration, centrifugation, gravity settling, grinding, shredding, crushing, or compacting.
   - ☐ b. Drying to remove water.
   - ☐ c. Separation based on differences in physical properties, such a size, magnetism, or density.

4. Alum, gypsum, lime, sulfur, or phosphate sludges. The monthly volume treated in this unit does not exceed 5,000 gallons or 45,000 pounds. Treatment using:
   - ☐ a. Drying to remove water.
   - ☐ b. Phase separation by filtration, centrifugation, or gravity settling.

5. Special wastes listed in Title 22, CCR, Section 66261.120 that meet the criteria in Title 22, CCR, Section 66261.122 which is hazardous solely due to the constituents, except asbestos, listed in Title 22, CCR, Section 66261.24(a)(1)(B) or (a)(2)(A) and which contain less than 750 ppm total of these constituents. The monthly volume treated in this unit does not exceed 5,000 gallons or 45,000 pounds. Treatment using:
   - ☐ a. Drying to remove water.
   - ☐ b. Phase separation by filtration, centrifugation, or gravity settling.
   - ☐ c. Screening to separate components based on size.
   - ☐ d. Separation based on differences in physical properties, such as size, magnetism, or density.

6. Special wastes classified under Title 22, CCR, Section 66261.124 as special wastes, except asbestos, which is hazardous solely due to the constituents, except asbestos, listed in Title 22, CCR, Section 66261.24(a)(1)(B) or (a)(2)(A) and which contain less than 750 ppm total of these constituents. The monthly volume treated in this unit does not exceed 5,000 gallons or 45,000 pounds. Treatment using:
   - ☐ a. Drying to remove water.
   - ☐ b. Phase separation by filtration, centrifugation, or gravity settling.
   - ☐ c. Magnetic separation.

7. Soils contaminated with metals listed in Title 22, CCR, Section 66261.24(a)(2)(A). The monthly volume treated in this unit does not exceed 5,000 gallons or 45,000 pounds. Treatment using:
   - ☐ a. Screening to separate components based on size.
   - ☐ b. Magnetic separation.

8. Oil mixed with water and oil/water separation sludges. (There is no volume limit for this wastestream.) Treatment using: (NOTE: Some used oil/water separation is allowed under the CEL category.)
   - ☐ a. Phase separation by filtration, centrifugation, or gravity settling, but excluding super critical fluid extraction, including the use of demulsifiers and flocculants. Heat can be used, but must not exceed 160 degrees Fahrenheit.
   - ☐ b. Separation based on differences in physical properties, such a size, magnetism, or density.
   - ☐ c. Reverse osmosis.

9. Neutralization of acidic or alkaline wastes, hazardous solely due to corrosivity, or toxic only from the acid or caustic material, in elementary neutralization units. (There is no volume limit for this wastestream.)
   - ☐ a. The waste contains less than 10 percent acid or base constituents by weight. There is no volume limit for this category.
   - ☒ b. The waste contains 10 percent or more acid or base constituents by weight and is treated in batches that do not exceed 500 gallons at one time.

10. Not in use/exempted — formerly recovery of silver from photofinishing.

11. Not in use/sunsetted — formerly treatment of spent cleaners and conditioners which are hazardous solely due to copper or copper compounds. Treatment of this wastestream is no longer allowed under Conditional Authorization as of January 1, 1998. Treatment of this wastestream now requires authorization under either Permit by Rule or, if the total volume treated is less than 55 gallons per month, under Conditionally Exempt Small Quantity Treatment.

. A waste stream technology combination certified by the Department pursuant to Section 25200.1.5 of the Health and Safety Code as appropriate for authorization under Conditional Authorization.

☐ Certified Technology Number: _____

Waste and Treatment Process Combinations Form CA Instructions
(Formerly DTSC Form 1772C)

This Waste and Treatment Process Combinations page lists those waste and treatment combinations certified by the Department of Toxic Substances Control (DTSC) pursuant to Health and Safety Code (H&SC) §25200.1.5 for authorization under the Conditionally Authorized (CA) tier. [Note: 1.) Reactive and extremely hazardous wastes are not allowed to be treated under this tier; 2.) Except for dilute aqueous waste and oily waste, volume of hazardous waste treated must not exceed 5,000 gallons (45,000 pounds) per month.]

Complete a separate Waste and Treatment Process Combinations page for each unit. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

606. UNIT ID NUMBER - Enter the unit ID number (same as item 606 from the Onsite Hazardous Waste Treatment Notification - Unit form).

1. FACILITY ID NUMBER - This space is for agency use only.

629. WASTE AND TREATMENT PROCESS COMBINATIONS (CA) - Use this page only for a CA unit. Check the appropriate boxes to indicate the waste and treatment process(es) that pertain to the unit. If the process is a technology certified by DTSC, enter the Certified Technology Number (Cert. #). Certified technologies appropriate for authorization, and the eligible tiers, are listed below.

CERTIFIED TECHNOLOGIES

DTSC is authorized to certify hazardous waste technologies. Appropriate certified technologies may be eligible for the CE, CA or PBR onsite treatment tiers. As of April 1, 1999, there is one certified technology for these tiers. The certification is for aldehyde treatment processes and is eligible for the CESW tier. The approved technology is:

Technology	Vendor	Cert. #	Effective Date	Tier	Description
Neutralex	Scigen 333 East Gardena Blvd. Gardena, CA 90248	97-01-0024	629/97 (expires 6/29/00)	CESW	Batch treatment for 10 percent Formalin generated by medical, educational, and laboratory facilities. Chemically treats in a provided 8 liter vessel. After testing, allows for disposal to sanitary sewer.

A copy of published Certification Statements and additional updates may be obtained by contacting DTSC at (916) 322-3670 or from the Cal/EPA on-line Bulletin Board via modem at (916) 322-5041.

WASTE STREAM SURVEY
BUILDING 70A WASTE TREATMENT SYSTEM

Room	Description of Process	Chemicals used in process	Chemicals in waste discharge	Concentration of chemicals in discharge (max.)	Volume of discharge	Frequency of discharge	Continuous or Batch
3357, 3318, 3318B	Etching of silicon and germanium wafers.	HF, H_2SO_4, HCl, NH_4F, H_2O_2, HNO_3, H_3PO_4, NH_4OH, acetic acid, methanol, isopropanol; other solvents	HF, H_2SO_4, HCl, NH_4F, H_2O_2, HNO_3, H_3PO_4, NH_4OH, acetic acid	HF: 9%; H_2SO_4: 81%; HCl: 10%; NH_4F: 36%; H_2O_2: 6%; HNO_3: 67%; H_3PO_4: 83%; NH_4OH: 3% acetic acid: 26%	Generally 100 ml for acid/peroxide or ammonium mixtures	1 discharge per week averaged over the year	Batch
4445	Etching and cleaning of silicon and germanium wafers; oxidation of wafers in high-temperature furnace	HF, H_2O_2, NH_4F, H_2SO_4, HCl, HNO_3, H_3PO_4, NaOH, acetic acid, HBF_4; commercial developers*	HF, H_2O_2, NH_4F, H_2SO_4, HCl, HNO_3, H_3PO_4, NaOH, acetic acid, HBF_4 ; commercial developers	HF: 7% H_2O_2: 1% H_2SO_4: 80% NH_4F: 34% HCl: 2% HNO_3: 36% H_3PO_4: 70% acetic acid: 10% HBF_4: 3% Commercial developers	Normal processing: small amounts of acids Batch replenishing: 1 to 5 gallons of various mixtures Leakage in lines: 1400 gallons per day of ultrapure water	Normal processing: maximum of twice a day at some work stations Batch replenishing: once a week at most for most baths	Batch for processing and replenishing; leakage in lines is continuous to ensure no growth of algae
4457	Cleaning of quartz pieces and columns	HF or HNO_3/HF mixture	HF or HNO_3/HF mixture	HF: 3% For mixture: HNO_3: 18%, HF: 6%	Varies; estimated 1-3 gallons of acid; volume of water used to rinse columns up to 200 gallons	Acid is normally recycled. Acid bath may have to be dumped 6-8 times a year	Batch

* Commercial developers contain sodium phosphate, sodium metasilicate, sodium hydroxide (15%), sodium borate and tetramethylammonium hydroxide(<1%).

Also, see "Classification of Hydrofluoric Acid Mixtures"

WASTE STREAM SURVEY
BUILDING 70A WASTE TREATMENT SYSTEM

Room	Description of process	Chemicals used in process	Chemicals in waste discharge	Concentration of chemicals in discharge (max.)	Volume of discharge	Frequency of discharge	Continuous or batch
4405	1. Leaching Filter material to remove trace metals.	1. HCl	1. HCl,	1. HCl: 1 N	1. 12 liters	1. 6 discharges/week for 2 weeks once or twice per year	1. Batch
	2.cleaning plastic/glassware for trace metal work	1. HCl, HNO3	1. HCl, HNO3	1. HCl 10% 2. HNO3 10%	2. 5 liters	2. 2 discharges/week	2. Batch
	3. leaches of ocean particles	3. HCl	3. HCl	3. HCl < 1%	3. < 1 liters	3. 1 discharge/month	3. Batch

WASTE STREAM SURVEY
BUILDING 70A WASTE TREATMENT SYSTEM

Room	Description of process	Chemicals used in process	Chemicals in waste discharge	Concentration of chemicals in discharge (max.)	Volume of discharge	Frequency of discharge	Continuous or batch
4413	1.Phosphoric acid (H_3PO_4) is added to groundwater samples to lower the pH and convert all dissolved inorganic carbon compounds in the sample to carbon dioxide which is analyzed on the mass spectrometer.	1. H_3PO_4	1. H_3PO_4	1. H_3PO_4: < 0.4%	1. 4 liters	1. 1 discharge/week	1. Batch
	2. Phosphoric acid is used to dissolve solid carbonates to generate carbon dioxide for isotope analyses. An automated process (2A) or a manual process (2B) is utilized. (ref. Mark Conrad 11/20/06 e-mail.)	2A. H_3PO_4 2B. H_3PO_4	2A. H_3PO_4 2B. H_3PO_4	2A. H_3PO_4: 2% 2B. H_3PO_4: 5%	2A. 0.5 liters 2B. 1 liter	2A. 4 discharges/year 2B. 4 discharges/year	2A. Batch 2B. Batch

WASTE STREAM SURVEY
BUILDING 70A WASTE TREATMENT SYSTEM

Room	Description of process	Chemicals used in process	Chemicals in waste discharge	Concentration of chemicals in discharge (max.)	Volume of discharge	Frequency of discharge	Continuous or batch
4419 4429	1. Leaching rock samples in HCL & H2O2 solution.	1. HCl, H2O2	1. HCl, H2O2	1. HCl: 18% H2O2: 0.2%	1. 7 liters	1. 3 discharges/week	1. Batch
	2. Quartz isolation w/ultrasonic cleaner, HF, HNO3.	2. HF, HNO3	2. HF, HNO3	2. HF: 1.1% HNO3: 1.1%	2. 24 liters	2. 5 discharges/week	2. Batch
	3. HCLO4 fumehood water filter.	3. HClO4	3. HClO4	3. HClO4: $\leq$ 0.01%	3. 10 liters	3. 1 discharge/week	3. Batch
	4. Oxygen isotope analysis.	4. H3PO4	4. H3PO4	4. H3PO4: 33%	4. 4 liters	4. 3 discharges/year	4. Batch
	5. Washing rock samples.	5. CH3COOH	5. CH3COOH	5. CH3COOH: 5%	5. 1 liter	5. 2 discharges/year	5. Batch

CLASSIFICATION OF HYDROFLUORIC ACID MIXTURES

BACKGROUND:

On December 17, 1993, Mr. David McGraw, Director of Environment, Health & Safety Division at Lawrence Berkeley Laboratory, requested a determination on whether dilute solutions of hydrofluoric acid are considered extremely hazardous wastes from Mr. James Strock, Director of California Environmental Protection Agency. (DIR93-151). Mr. Strock routed the letter to Mr. Ronald Pilorin, Chief of the Waste Evaluation Unit, Cal-EPA. Mr. Pilorin responded to Mr. McGraw on January 20, 1993.

In Mr. Pilorin's letter he noted,

> "As you are well aware, there are no identified or approved testing methods to determine whether a waste which contains a water reactive substance such as hydrofluoric ... acid would be considered to be water reactive." He further states, "Section 66262.11, 22 CCR, states that a 'generator may determine that the waste from his particular facility or operation is not a hazardous waste [or an extremely hazardous waste, R.P.] by either: (1) testing the waste,...; or (2) applying knowledge of the hazard characteristic of the waste in light of the materials or the processes used and the [hazardous waste or extremely hazardous waste, R.P.] characteristics,....' In absence of test methods identified within the extremely hazardous waste criteria, **ANY** test methods or assessment techniques can be used to satisfy the requirement for knowledge about the waste. Any other source of information may be used for this purpose as well. Unfortunately, at this time the Department does not have the staff or resources to immediately develop a specific test method." (emphasis added)

KNOWLEDGE OF THE WASTE:

From a survey of the users of the fixed treatment unit at building 70A (FTU 004) it has been determined that the highest percent of hydrofluoric acid, at the point of generation, is under 10% hydrofluoric acid. Typically, the hydrofluoric acid volume is 500 milliliters or less.

A report prepared by a certified professional chemical engineer at Sampson Engineering Associates (SAE) entitled, "Hydrofluoric Acid Hazardous/Extremely Hazardous Waste Classification", concludes that, "...liquids containing HF [hydrofluoric acid] at less than 38.2 weight percent concentration (it may be possible to demonstrate this conclusion for 47 weight percent solutions [SAE]) should be regulated as hazardous, not extremely hazardous."

Our past experience with solutions of less than 10% hydrofluoric acid also show that these solutions are not water reactive and therefore do not meet extremely hazardous waste criteria.

CONCLUSION:

Solutions of hydrofluoric acid less than 38.2% hydrofluoric acid are not extremely hazardous. These waste solutions will be managed as a hazardous waste.

UNIFIED PROGRAM CONSOLIDATED FORM
HAZARDOUS WASTE

ONSITE HAZARDOUS WASTE TREATMENT NOTIFICATION – UNIT PAGE

(One page and attachments per unit)

FACILITY ID#	1.	BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As)	3.
		Lawrence Berkeley National Laboratory	

I. TREATMENT UNIT

UNIT ID# 606.	UNIT TYPE/TIER 607.	NUMBER OF TANKS 608.	NUMBER OF CONTAINERS/ TREATMENT AREAS 609.
FTU 005	☐ a. CESQT ☐ b. CESW ☒ c. CA ☐ d. PBR ☐ e. CEL	5	0
UNIT NAME 610.		**MONTHLY TREATMENT VOLUME 611.**	**UNIT OF MEASURE 612.**
Building 2		25,000	☐ a. Pounds ☒ b. Gallons

SPECIFIC WASTE TYPE TREATED (narrative) 613.

Acidic wastes are generated in various laboratories in Building 2. Acids that are discharged include: hydrochloric acid, phosphoric acid, sulfuric acid, acetic acid, nitric acid, and other acids. A complete listing is found in the attachment, "Building 2 Fixed Treatment Unit Waste Steam Survey."

TREATMENT PROCESS DESCRIPTION (narrative) 614.

Neutralization of acidic wastes by elementry neutralization with sodium hydroxide.

(NOTE: For each treatment unit, complete and attach the appropriate Waste and Treatment Process Combinations page.)

II. BASIS FOR NOT NEEDING FEDERAL PERMIT (Check all that apply)

615.

- ☐ a. The treated waste is not a hazardous waste under federal law (California-only waste).
- ☒ b. Treated in waste water treatment units (tanks) and discharged to a publicly owned treatment works (POTW)/sewering agency or under an NPDES permit.
- ☒ c. Treatment in elementary neutralization units.
- ☐ d. Treatment in a totally enclosed treatment facility.
- ☐ e. Federal conditionally exempt small quantity generator (generated 100 kg., approximately 27 gallons, or less of hazardous waste in a calendar month).
- ☐ f. Treatment in an accumulation tank or container within 90 days for over 1,000 kg./month generators and 180 or 270 days for generators of 100 to 1,000 kg./month.
- ☐ g. Recyclable materials are reclaimed to recover silver or other precious metals.
- ☐ h. Empty container rinsing and/or treatment.
- ☐ i. Other (specify below)

III. RESIDUALS MANAGEMENT DESCRIPTION (Check all that apply)

616.

- ☒ a. Discharge non-hazardous aqueous waste to POTW or sewer.
- ☐ b. Discharge non-hazardous aqueous waste under a NPDES permit.
- ☐ c. Dispose of non-hazardous solid waste residues at an offsite location.

Residual hazardous waste hauled offsite by a registered hauler.

- ☐ d. Offsite recycling
- ☐ e. Thermal treatment
- ☐ f. Disposal to land
- ☐ g. Further treatment
- ☐ h. Other method of disposal (describe below)

ECONDARY CONTAINMENT INSTALLATION DATE (If required) 1998 617.

Onsite Hazardous Waste Treatment Notification – Unit
[(Formerly DTSC Form 1772A,B,C,D,L)]

Complete an Onsite Hazardous Waste Treatment Notification - Unit page and a Waste and Treatment Process Combinations page f each treatment unit operating at this facility. Commercial Laundries are not required to complete unit specific pages, provided t laundering is the only hazardous waste treatment activity conducted by the facility. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

1. FACILITY ID NUMBER - This space is for agency use only.
3. BUSINESS NAME - Enter the complete Facility Name.
606. UNIT ID NUMBER - Enter a unique number for each unit. All unit numbers must be clearly labeled on the plot plan/map.
607. UNIT TYPE / TIER - Check the appropriate box to indicate unit type under the Tiered Permitting program.
608. NUMBER OF TANKS - Enter the number of tanks used in the unit. ["Tank" means a stationary device, designed to contain an accumulation of hazardous waste, which is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) which provide structural support.]
609. NUMBER OF CONTAINERS/TREATMENT AREAS - Enter the number of containers/container treatment areas used in the unit. ["Container" means any device that is open or closed, and portable in which a material can be stored, handled, treated, transported, disposed of, or recycled.] "Treatment Area" is a location set aside and used to treat waste in containers.
610. UNIT NAME - Enter the name of the treatment unit. A treatment unit is defined as a tank, a container, or a combination of tanks or tank systems and/or containers located together that are used in sequence to treat or accumulate one or more compatible hazardous waste streams. The devices are either plumbed together or otherwise linked so as to form one system.
611. MONTHLY TREATMENT VOLUME - Enter the estimated monthly total volume of hazardous waste treated in this unit. If the volume fluctuates significantly by month, enter the maximum volume treated in any month.
612. UNIT OF MEASURE - Check a box to indicate whether the treatment volume unit of measure is pounds or gallons.
613. SPECIFIC WASTE TYPE TREATED - Describe the specific waste type(s) treated (e.g. If the waste qualifies as an aqueous waste with metals or organics, indicate the specific metals or organics).
614. TREATMENT PROCESS DESCRIPTION - Describe the treatment process(es) used. Indicate if the activities are seasonal or periodic.
615. BASIS FOR NOT NEEDING FEDERAL PERMIT - Check the reason(s) that best describe why your onsite treatment unit does not need a federal hazardous waste permit. You must indicate at least one reason to prove your eligibility for the onsite treatment tiers. If you are unsure how these exemptions apply to your operation, contact your Certified Unified Program Agen (CUPA), the DTSC Regional Office closest to you, the U.S. EPA Region IX RCRA Information Line at (415) 744-2074, or th U.S. EPA RCRA Hotline at (800) 424-9346. The eight most common reasons for not needing a federal permit are listed on this form. There is also a space to specify any other reason for exemption and a supporting regulatory citation. The following terms are defined in 40 CFR §260.10:

    Wastewater Treatment Unit - A device which: (1) is part of a wastewater treatment facility regulated under section 402 or 307(b) of the Clean Water Act, and (2) receives and treats or stores an influent wastewater that is a hazardous waste or that generates and accumulates a wastewater treatment sludge that is a hazardous waste or that treats or stores a wastewater treatment sludge which is a hazardous waste, and (3) meets the definition of tank or tank system.

    Elementary Neutralization Unit - A device which (1) is used for neutralizing wastes that are hazardous only because they exhibit the corrosivity characteristic or they are listed only for this reason, and (2) meets the definition of tank, tank system, container, transport vehicle, or vessel.

    Totally Enclosed Treatment Facility - A facility for the treatment of hazardous waste which is directly connected to an industrial production process and which is constructed and operated in a manner which prevents the release of any hazardous waste or any constituent thereof into the environment during treatment.

    NPDES Permit - A permit issued by a regional water board allowing discharge of waste to the environment under the National Pollutant Discharge Elimination System (NPDES).
616. RESIDUALS MANAGEMENT DESCRIPTION - Check the appropriate box(es) to describe how treatment residuals are managed. If box h. is checked, describe the "other" methods in the space provided.
617. SECONDARY CONTAINMENT INSTALLATION DATE - Enter the date the secondary containment was installed.

UNIFIED PROGRAM CONSOLIDATED FORM
ONSITE TIERED PERMITTING

CONDITIONALLY AUTHORIZED (CA) PAGE

WASTE AND TREATMENT PROCESS COMBINATIONS

(One page per treatment unit. Check all that apply)

605. UNIT ID# FTU 005	1. Facility ID#	Page 20 of 49

629.

1. Aqueous wastes, hazardous solely due to inorganic constituents, except asbestos, listed in Title 22, CCR, Section 66261.24(a)(1)(B) or (a)(2)(A) and which contain less than 1,400 ppm total of these constituents. (There is no volume limit for this wastestream.) Treatment using:
   - ☐ a. Phase separation, including precipitation, by filtration, centrifugation, or gravity settling, including the use of demulsifiers and flocculants.
   - ☐ b. Ion exchange, including metallic replacement.
   - ☐ c. Reverse osmosis.
   - ☐ d. Adsorption.
   - ☐ e. pH adjustment of aqueous waste with a pH of between 2.0 and 12.5.
   - ☐ f. Electrowinning of solutions, unless those solutions contain hydrochloric acid.
   - ☐ g. Reduction of solutions hazardous solely due to hexavalent chromium, to trivalent chromium with sodium bisulfite, sodium metabisulfite, sodium thiosulfate, ferrous chloride, ferrous sulfate, ferrous sulfide, or sulfur dioxide. The solution contains less than 750 ppm of hexavalent chromium.

2. Aqueous wastes, hazardous solely due to organic constituents listed in Title 22, CCR, Section 66261.24(a)(1)(B) or (2)(B) and which contain less than 750 ppm total of these constituents. (There is no volume limit for this wastestream.) Treatment using:
   - ☐ a. Phase separation by filtration, centrifugation, or gravity settling, but excluding super critical fluid extraction.
   - ☐ b. Adsorption.

3. Sludges resulting from wastewater treatment, dusts, solid metal objects, and metal workings which are hazardous solely due to the presence of constituents, except asbestos, listed in Title 22, CCR, Section 66261.24(a)(1)(B) or (a)(2)(A) and which, for dusts only, contain less than 750 ppm total of these constituents. The monthly volume treated in this unit does not exceed 5,000 gallons or 45,000 pounds. Treatment using:
   - ☐ a. Physical processes which constitute treatment only because they change the physical properties of the waste, such as filtration, centrifugation, gravity settling, grinding, shredding, crushing, or compacting.
   - ☐ b. Drying to remove water.
   - ☐ c. Separation based on differences in physical properties, such a size, magnetism, or density.

4. Alum, gypsum, lime, sulfur, or phosphate sludges. The monthly volume treated in this unit does not exceed 5,000 gallons or 45,000 pounds. Treatment using:
   - ☐ a. Drying to remove water.
   - ☐ b. Phase separation by filtration, centrifugation, or gravity settling.

5. Special wastes listed in Title 22, CCR, Section 66261.120 that meet the criteria in Title 22, CCR, Section 66261.122 which is hazardous solely due to the constituents, except asbestos, listed in Title 22, CCR, Section 66261.24(a)(1)(B) or (a)(2)(A) and which contain less than 750 ppm total of these constituents. The monthly volume treated in this unit does not exceed 5,000 gallons or 45,000 pounds. Treatment using:
   - ☐ a. Drying to remove water.
   - ☐ b. Phase separation by filtration, centrifugation, or gravity settling.
   - ☐ c. Screening to separate components based on size.
   - ☐ d. Separation based on differences in physical properties, such as size, magnetism, or density.

6. Special wastes classified under Title 22, CCR, Section 66261.124 as special wastes, except asbestos, which is hazardous solely due to the constituents, except asbestos, listed in Title 22, CCR, Section 66261.24(a)(1)(B) or (a)(2)(A) and which contain less than 750 ppm total of these constituents. The monthly volume treated in this unit does not exceed 5,000 gallons or 45,000 pounds. Treatment using:
   - ☐ a. Drying to remove water.
   - ☐ b. Phase separation by filtration, centrifugation, or gravity settling.
   - ☐ c. Magnetic separation.

7. Soils contaminated with metals listed in Title 22, CCR, Section 66261.24(a)(2)(A). The monthly volume treated in this unit does not exceed 5,000 gallons or 45,000 pounds. Treatment using:
   - ☐ a. Screening to separate components based on size.
   - ☐ b. Magnetic separation.

8. Oil mixed with water and oil/water separation sludges. (There is no volume limit for this wastestream.) Treatment using: (NOTE: Some used oil/water separation is allowed under the CEL category.)
   - ☐ a. Phase separation by filtration, centrifugation, or gravity settling, but excluding super critical fluid extraction, including the use of demulsifiers and flocculants. Heat can be used, but must not exceed 160 degrees Fahrenheit.
   - ☐ b. Separation based on differences in physical properties, such a size, magnetism, or density.
   - ☐ c. Reverse osmosis.

9. Neutralization of acidic or alkaline wastes, hazardous solely due to corrosivity, or toxic only from the acid or caustic material, in elementary neutralization units. (There is no volume limit for this wastestream.)
   - ☐ a. The waste contains less than 10 percent acid or base constituents by weight. There is no volume limit for this category.
   - ☒ b. The waste contains 10 percent or more acid or base constituents by weight and is treated in batches that do not exceed 500 gallons at one time.

10. Not in use/exempted — formerly recovery of silver from photofinishing.

11. Not in use/sunsetted — formerly treatment of spent cleaners and conditioners which are hazardous solely due to copper or copper compounds. Treatment of this wastestream is no longer allowed under Conditional Authorization as of January 1, 1998. Treatment of this wastestream now requires authorization under either Permit by Rule or, if the total volume treated is less than 55 gallons per month, under Conditionally Exempt Small Quantity Treatment.

. A waste stream technology combination certified by the Department pursuant to Section 25200.1.5 of the Health and Safety Code as appropriate for authorization under Conditional Authorization.

☐ Certified Technology Number: _____

Waste and Treatment Process Combinations Form CA Instructions
(Formerly DTSC Form 1772C)

This Waste and Treatment Process Combinations page lists those waste and treatment combinations certified by the Department of Toxic Substances Control (DTSC) pursuant to Health and Safety Code (H&SC) §25200.1.5 for authorization under the Conditionally Authorized (CA) tier. [Note: 1.) Reactive and extremely hazardous wastes are not allowed to be treated under this tier; 2.) Except for dilute aqueous waste and oily waste, volume of hazardous waste treated must not exceed 5,000 gallons (45,000 pounds) per month.]

Complete a separate Waste and Treatment Process Combinations page for each unit. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

606. UNIT ID NUMBER - Enter the unit ID number (same as item 606 from the Onsite Hazardous Waste Treatment Notification - Unit form).

1. FACILITY ID NUMBER - This space is for agency use only.

629. WASTE AND TREATMENT PROCESS COMBINATIONS (CA) - Use this page only for a CA unit. Check the appropriate boxes to indicate the waste and treatment process(es) that pertain to the unit. If the process is a technology certified by DTSC, enter the Certified Technology Number (Cert. #). Certified technologies appropriate for authorization, and the eligible tiers, are listed below.

CERTIFIED TECHNOLOGIES

DTSC is authorized to certify hazardous waste technologies. Appropriate certified technologies may be eligible for the CE, CA or PBR onsite treatment tiers. As of April 1, 1999, there is one certified technology for these tiers. The certification is for aldehyde treatment processes and is eligible for the CESW tier. The approved technology is:

Technology	Vendor	Cert. #	Effective Date	Tier	Description
Neutralex	Scigen 333 East Gardena Blvd. Gardena, CA 90248	97-01-0024	629/97 (expires 6/29/00)	CESW	Batch treatment for 10 percent Formalin generated by medical, educational, and laboratory facilities. Chemically treats in a provided 8 liter vessel. After testing, allows for disposal to sanitary sewer.

A copy of published Certification Statements and additional updates may be obtained by contacting DTSC at (916) 322-3670 or from the Cal/EPA on-line Bulletin Board via modem at (916) 322-5041.

Building 2 Fixed Treatment Unit Waste Stream Survey

Room	Description of Process	Chemicals Used in Process	Chemicals in Waste Discharge	Concentration of Chemicals in Discharge (MAX)	Average volume of Discharge (Gallons/day)	Frequency of Discharge	Continuous or Batch
102	Cleaning of glassware and teflon equipment	H2SO4, HNO3, HCl, KOH, Solvents	H2SO4, HNO3, HCl	HNO3=1% H2SO4=1% HCl=6%	20	3-10 per week	Batch
133	Cleaning and preparing silicon and germanium samples	HNO3, HF, TCE, Methanol, Acetone	HNO3, HF	HNO3=10% HF=7%	0.1	1 per week	Batch
137	Cleaning silicon wafers for lithography	NH4OH, H2O2, HCl, HF	H2O2, HCl, HF	(1) H2O2=4.2% (2) HCl =3.8% H202=12.5%	(1) 1.0 (2) 1.0	3 per week for ea.	Batch
137	Etching of silicon wafers	KOH, H2SO4, H2O2	H2SO4, H2O2	H2SO4=20% H2O2=10%	1.0	2 per week	Batch
216	Sample preparation - cutting, cleaning, etching	HCl, HF, HNO3, H2SO4, Acetic acid	HNO3, HF, Acetic acid	HNO3=10% CH3CHOOH=15% HF=7%	0.3	2-3 per week	Batch
224	Germanium Etching	HNO3, HT, Pd, Cr, Methanol	HNO3, HF	HNO3=7% HF=6%	0.5	3 per week	Batch
236	Cleaning wafers for lithography	HF, H3PO4, Chlorobenzene	HF, H3PO4	HF=7% H3PO4=5%	0.2	1 per week	Batch
229	Etching silicon wafers	HNO3, HF, NH40H, HCl, H202, Methanol, TCE	HNO3, HF, HCl	HNO3=15% HF=2.5% HCl=5%	3.4	2 per month	Batch
260A	Germanium crystal growth	HNO3, HF, Methanol	HNO3, HF	HNO3=10% HF=7%	1	1 per week	Batch

NOTE: the "Volume of Discharge" column represents the volume of waste that is discharged acid sinks. Also see "Classification of Hydrofluoric Acid Mixtures".

Revised 2/10/98.

Building 2 Fixed Treatment Unit Waste Stream Survey

Room	Description of Process	Chemicals Used in Process	Chemicals in Waste Discharge	Concentration of Chemicals in Discharge (MAX)	Average volume of Discharge (Gallons/day)	Frequency of Discharge	Continuous or Batch
261A	Etching gallium arsenide, quartz, & silicon in crystal growth experiments	HNO3, HF, HCl, H2SO4, KOH, NaOH, Methanol, Acetone, TCE, 1,1,1-TCA	HNO3, HF, HCl, H2SO4, H2O2	H2SO4=15% H2O2=15% HNO3=10% HF=7% HCl=5%	1	HCl/HNO3/HF = 2 per month HF = 2 per week H2SO4 = 4 per week	Batch
263A	Sample preparation - cutting, cleaning, etching	HCl, HF, HNO3, H2SO4, Acetic acid	HNO3, HF, Acetic acid	CH3CHOOH=15% HNO3=10% HF=7%	0.2	2-3 per week	Batch
322	Cleaning experimental apparatus	HCl	HCl	HCl=6%	0.002	1 per month	Batch
338 & 340	Cleaning of glass coverslips for single molecule studies using confocal microscopy	HF	HF	HF=5%	0.25	5 days per week	Batch
422	Cleaning silicon nitride	HCL, H2SO4, H2O2, NaOH, KOH	HCL, H2SO4	H2SO4=15% HCL=6%	0.02	1-2 per week	Batch

NOTE: the "Volume of Discharge" column represents the volume of waste that is discharged acid sinks. Also see "Classification of Hydrofluoric Acid Mixtures".

Revised 2/10/98.

CLASSIFICATION OF HYDROFLUORIC ACID MIXTURES

BACKGROUND:

On December 17, 1993, Mr. David McGraw, Director of Environment, Health & Safety Division at Lawrence Berkeley Laboratory, requested a determination on whether dilute solutions of hydrofluoric acid are considered extremely hazardous wastes from Mr. James Strock, Director of California Environmental Protection Agency. (DIR93-151). Mr. Strock routed the letter to Mr. Ronald Pilorin, Chief of the Waste Evaluation Unit, Cal-EPA. Mr. Pilorin responded to Mr. McGraw on January 20, 1993.

In Mr. Pilorin's letter he noted,

> "As you are well aware, there are no identified or approved testing methods to determine whether a waste which contains a water reactive substance such as hydrofluoric ... acid would be considered to be water reactive." He further states, "Section 66262.11, 22 CCR, states that a 'generator may determine that the waste from his particular facility or operation is not a hazardous waste [or an extremely hazardous waste, R.P.] by either: (1) testing the waste,...; or (2) applying knowledge of the hazard characteristic of the waste in light of the materials or the processes used and the [hazardous waste or extremely hazardous waste, R.P.] characteristics,....' In absence of test methods identified within the extremely hazardous waste criteria, **ANY** test methods or assessment techniques can be used to satisfy the requirement for knowledge about the waste. Any other source of information may be used for this purpose as well. Unfortunately, at this time the Department does not have the staff or resources to immediately develop a specific test method." (emphasis added)

KNOWLEDGE OF THE WASTE:

From a survey of the users of the fixed treatment unit at building 2 (FTU 005) it has been determined that the highest percent of hydrofluoric acid, at the point of generation, is under 10% hydrofluoric acid. Typically, the hydrofluoric acid volume is 500 milliliters or less.

A report prepared by a certified professional chemical engineer at Sampson Engineering Associates (SAE) entitled, "Hydrofluoric Acid Hazardous/Extremely Hazardous Waste Classification", concludes that, "...liquids containing HF [hydrofluoric acid] at less than 38.2 weight percent concentration (it may be possible to demonstrate this conclusion for 47 weight percent solutions [SAE]) should be regulated as hazardous, not extremely hazardous."

Our past experience with solutions of less than 10% hydrofluoric acid also show that these solutions are not water reactive and therefore do not meet extremely hazardous waste criteria.

CONCLUSION:

Solutions of hydrofluoric acid less than 38.2% hydrofluoric acid are not extremely hazardous. These waste solutions will be managed as a hazardous waste.

UNIFIED PROGRAM CONSOLIDATED FORM
HAZARDOUS WASTE

ONSITE HAZARDOUS WASTE TREATMENT NOTIFICATION – UNIT PAGE

(One page and attachments per unit)

FACILITY ID# 1.

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As) 3.
Lawrence Berkeley National Laboratory

I. TREATMENT UNIT

UNIT ID# 606.	UNIT TYPE/TIER 607.	NUMBER OF TANKS 608.	NUMBER OF CONTAINERS/ TREATMENT AREAS 609.
FTU 006	☐ a. CESQT ☐ b. CESW ☐ c. CA ☒ d. PBR ☐ e. CEL	17	0
UNIT NAME 610.	**MONTHLY TREATMENT VOLUME 611.**	**UNIT OF MEASURE 612.**	
Building 77 Ultra High Vacuum Cleaning Facility	10,000	☐ a. Pounds ☒ b. Gallons	

SPECIFIC WASTE TYPE TREATED (narrative) 613.
Aqueous waste and sludge containing metals listed in 22 CCR 66261.24(a)(2).

TREATMENT PROCESS DESCRIPTION (narrative) 614.
Metals precipitation, pH adjustment, and sludge dewatering. See attached, "Process Description, Ultra High Vacuum Cleaning Facility & Fixed Treatment Unit FTU 006" for a a more detailed description of the treatment process.

(NOTE: For each treatment unit, complete and attach the appropriate Waste and Treatment Process Combinations page.)

II. BASIS FOR NOT NEEDING FEDERAL PERMIT (Check all that apply)

615.

☐ a. The treated waste is not a hazardous waste under federal law (California-only waste).

☒ b. Treated in waste water treatment units (tanks) and discharged to a publicly owned treatment works (POTW)/sewering agency or under an NPDES permit.

☐ c. Treatment in elementary neutralization units.

☐ d. Treatment in a totally enclosed treatment facility.

☐ e. Federal conditionally exempt small quantity generator (generated 100 kg., approximately 27 gallons, or less of hazardous waste in a calendar month).

☐ f. Treatment in an accumulation tank or container within 90 days for over 1,000 kg./month generators and 180 or 270 days for generators of 100 to 1,000 kg./month.

☐ g. Recyclable materials are reclaimed to recover silver or other precious metals.

☐ h. Empty container rinsing and/or treatment.

☐ i. Other (specify below)

III. RESIDUALS MANAGEMENT DESCRIPTION (Check all that apply)

☒ a. Discharge non-hazardous aqueous waste to POTW or sewer.

☐ b. Discharge non-hazardous aqueous waste under a NPDES permit.

☐ c. Dispose of non-hazardous solid waste residues at an offsite location.

Residual hazardous waste hauled offsite by a registered hauler. 616.

☐ d. Offsite recycling
☐ e. Thermal treatment
☒ f. Disposal to land
☒ g. Further treatment
☐ h. Other method of disposal (describe below)

SECONDARY CONTAINMENT INSTALLATION DATE (If required) 1990 617.

Onsite Hazardous Waste Treatment Notification – Unit
[(Formerly DTSC Form 1772A,B,C,D,L)]

Complete an Onsite Hazardous Waste Treatment Notification - Unit page and a Waste and Treatment Process Combinations page for each treatment unit operating at this facility. Commercial Laundries are not required to complete unit specific pages, provided that laundering is the only hazardous waste treatment activity conducted by the facility. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

1. FACILITY ID NUMBER - This space is for agency use only.
3. BUSINESS NAME - Enter the complete Facility Name.
606. UNIT ID NUMBER - Enter a unique number for each unit. All unit numbers must be clearly labeled on the plot plan/map.
607. UNIT TYPE / TIER - Check the appropriate box to indicate unit type under the Tiered Permitting program.
608. NUMBER OF TANKS - Enter the number of tanks used in the unit. ["Tank" means a stationary device, designed to contain an accumulation of hazardous waste, which is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) which provide structural support.]
609. NUMBER OF CONTAINERS/TREATMENT AREAS - Enter the number of containers/container treatment areas used in the unit. ["Container" means any device that is open or closed, and portable in which a material can be stored, handled, treated, transported, disposed of, or recycled.] "Treatment Area" is a location set aside and used to treat waste in containers.
610. UNIT NAME - Enter the name of the treatment unit. A treatment unit is defined as a tank, a container, or a combination of tanks or tank systems and/or containers located together that are used in sequence to treat or accumulate one or more compatible hazardous waste streams. The devices are either plumbed together or otherwise linked so as to form one system.
611. MONTHLY TREATMENT VOLUME - Enter the estimated monthly total volume of hazardous waste treated in this unit. If the volume fluctuates significantly by month, enter the maximum volume treated in any month.
612. UNIT OF MEASURE - Check a box to indicate whether the treatment volume unit of measure is pounds or gallons.
613. SPECIFIC WASTE TYPE TREATED - Describe the specific waste type(s) treated (e.g. If the waste qualifies as an aqueous waste with metals or organics, indicate the specific metals or organics).
614. TREATMENT PROCESS DESCRIPTION - Describe the treatment process(es) used. Indicate if the activities are seasonal or periodic.
615. BASIS FOR NOT NEEDING FEDERAL PERMIT - Check the reason(s) that best describe why your onsite treatment unit does not need a federal hazardous waste permit. You must indicate at least one reason to prove your eligibility for the onsite treatment tiers. If you are unsure how these exemptions apply to your operation, contact your Certified Unified Program Agency (CUPA), the DTSC Regional Office closest to you, the U.S. EPA Region IX RCRA Information Line at (415) 744-2074, or the U.S. EPA RCRA Hotline at (800) 424-9346. The eight most common reasons for not needing a federal permit are listed on this form. There is also a space to specify any other reason for exemption and a supporting regulatory citation. The following terms are defined in 40 CFR §260.10:

    Wastewater Treatment Unit - A device which: (1) is part of a wastewater treatment facility regulated under section 402 or 307(b) of the Clean Water Act, and (2) receives and treats or stores an influent wastewater that is a hazardous waste or that generates and accumulates a wastewater treatment sludge that is a hazardous waste or that treats or stores a wastewater treatment sludge which is a hazardous waste, and (3) meets the definition of tank or tank system.

    Elementary Neutralization Unit - A device which (1) is used for neutralizing wastes that are hazardous only because they exhibit the corrosivity characteristic or they are listed only for this reason, and (2) meets the definition of tank, tank system, container, transport vehicle, or vessel.

    Totally Enclosed Treatment Facility - A facility for the treatment of hazardous waste which is directly connected to an industrial production process and which is constructed and operated in a manner which prevents the release of any hazardous waste or any constituent thereof into the environment during treatment.

    NPDES Permit - A permit issued by a regional water board allowing discharge of waste to the environment under the National Pollutant Discharge Elimination System (NPDES).
616. RESIDUALS MANAGEMENT DESCRIPTION - Check the appropriate box(es) to describe how treatment residuals are managed. If box h. is checked, describe the "other" methods in the space provided.
617. SECONDARY CONTAINMENT INSTALLATION DATE - Enter the date the secondary containment was installed.

UNIFIED PROGRAM CONSOLIDATED FORM
ONSITE TIERED PERMITTING

PERMIT BY RULE (PBR) PAGE

WASTE AND TREATMENT PROCESS COMBINATIONS

(One page per treatment unit. Check all that apply)

606. UNIT ID# FTU 006 | 1. Facility ID# | Page 25 of 49

630.

1. Aqueous wastes containing hexavalent chromium may be treated by the following process:
Reduction of hexavalent chromium to trivalent chromium with sodium bisulfite, sodium metabisulfite, sodium thiosulfate, ferrous sulfate, ferrous sulfide or sulfur dioxide provided
☐ a. both pH and addition of the reducing agent are automatically controlled.

2. Aqueous wastes containing metals listed in Title 22, CCR, Section 66261.24 (a)(2) and/or fluoride salts may be treated by the following technologies:
☒ a. pH adjustment or neutralization.
☒ b. Precipitation or crystallization.
☐ c. Phase separation by filtration, centrifugation or gravity settling.
☐ d. Ion exchange.
☐ e. Reverse osmosis.
☐ f. Metallic replacement.
☐ g. Plating the metal onto an electrode.
☐ h. Electrodialysis
☐ i. Electrowinning or electrolytic recovery
☐ j. Chemical stabilization using silicates and/or cementitious types of reactions.
☐ k. Evaporation.
☐ l. Adsorption

3. Aqueous wastes with total organic carbon less than 10% as measured by EPA Method 9060 and less than 1% total volatile organic compounds as measured by EPA Method 8240 may be treated by the following technologies::
☐ a. Phase separation by filtration, centrifugation or gravity settling, but excluding super critical fluid extraction.
☐ b. Adsorption.
☐ c. Distillation.
☐ d. Biological processes conducted in tanks or containers and utilizing naturally occurring microorganisms.
☐ e. Photodegradation using ultraviolet light, with or without the addition of hydrogen peroxide or ozone, provided the treatment is conducted in an enclosed system.
☐ f. Air stripping or steam stripping.

4. Sludges, dusts, solid metal objects and metal workings which contain or are contaminated with metals listed in Title 22, CCR, Section 66261.24 (a)(2) and/or fluoride salts may be treated by the following technologies:
☐ a. Chemical stabilization using silicates and/or cementitious types of reactions.
☒ b. Physical processes which change only the physical properties of the waste such as grinding, shredding, crushing or compacting.
☒ c. Drying to remove water.
☐ d. Separation based on differences in physical properties such as size, magnetism or density.

5. Alum, gypsum, lime, sulfur or phosphate sludges may be treated by the following technologies:
☐ a. Chemical stabilization using silicates and/or cementitious types of reactions.
☐ b. Drying to remove water.
☐ c. Phase separation by filtration, centrifugation or gravity settling.

Wastes identified in Title 22, CCR, Section 66261.120, that meet the criteria and requirements for special waste classification in Section 66261.122 may be treated by the following technologies:
☐ a. Chemical stabilization using silicates and/or cementitious types of reactions.
☐ b. Drying to remove water.
☐ c. Phase separation by filtration, centrifugation or gravity settling.
☐ d. Screening to separate components based on size.
☐ e. Separation based on differences in physical properties such as size, magnetism or density.

7. Wastes, except asbestos, which have been classified by the Department as special wastes pursuant to Title 22, CCR, Section 66261.124, may be treated by the following technologies:
☐ a. Chemical stabilization using silicates and/or cementitious types of reactions.
☐ b. Drying to remove water.
☐ c. Phase separation by filtration, centrifugation or gravity settling.
☐ d. Magnetic separation.

8. Inorganic acid or alkaline wastes may be treated by the following technology:
☐ a. pH adjustment or neutralization.

9. Soils contaminated with metals listed in Title 22, CCR, Section 66261.24(a)(2), (Persistent and Bioaccumulative Toxic Substances) may be treated by the following technologies:
☐ a. Chemical stabilization using silicates and/or cementitious types of reactions.
☐ b. Screening to separate components based on size.
☐ c. Magnetic separation.

10. Used oil, unrefined oil waste, mixed oil, oil mixed with water and oil/water separation sludges may be treated by the following technologies:
☐ a. Phase separation by filtration, centrifugation or gravity settling, but excluding super critical fluid extraction.
☐ b. Distillation.
☐ c. Neutralization.
☐ d. Separation based on differences in physical properties such as size, magnetism or density.
☐ e. Reverse osmosis.
☐ f. Biological processes conducted in tanks or containers and utilizing naturally occurring microorganisms.

11. Containers of 110 gallons or less capacity which are not constructed of wood, paper, cardboard, fabric, or any other similar absorptive material, which have been emptied as specified in Title 40 of the Code of Federal Regulations, section 261.7 or inner liners removed from empty containers that once held hazardous waste or hazardous material and which are not excluded from regulation may be treated by the following technologies provided the treated containers and rinseate are managed in compliance with applicable requirements.
☐ a. Rinsing with a suitable liquid capable of dissolving or removing the hazardous constituents which the container held.
☐ b. Physical processes such as crushing, shredding, grinding or puncturing, that change only the physical properties of the container or inner liner, provided the container or inner liner is first rinsed and the rinseate is removed from the container or inner liner.

12. Multi-component resins may be treated by the following process:
☐ a. Mixing the resin components in accordance with the manufacturer's instructions.

A waste stream technology combination certified by the Department pursuant to Section 25200.1.5 of the Health and Safety Code as appropriate for authorization under Permit by Rule.
☐ Certified Technology Number: _____

Waste and Treatment Process Combinations Form PBR Instructions
(Formerly DTSC Form 1772D)

This Waste and Treatment Process Combinations page lists those waste and treatment combinations certified by the Department of Toxic Substances Control (DTSC) pursuant to Health and Safety Code (H&SC) §25200.1.5 for authorization under the Permit by Rule (PBR) tier. (Note: Reactive and extremely hazardous wastes are not allowed to be treated under this tier.)

Complete a separate Waste and Treatment Process Combinations page for each unit. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

606. UNIT ID NUMBER - Enter the unit ID number (same as item 606 from the Onsite Hazardous Waste Treatment Notification - Unit form).

1. FACILITY ID NUMBER - This space is for agency use only.

630. WASTE AND TREATMENT PROCESS COMBINATIONS (PBR) - Use this page only for a PBR unit. Check the appropriate boxes to indicate the waste and treatment process(es) that pertain to the unit. If the process is a technology certified by DTSC, enter the Certified Technology Number (Cert. #). Certified technologies appropriate for authorization, and the eligible tiers, are listed below.

CERTIFIED TECHNOLOGIES

DTSC is authorized to certify hazardous waste technologies. Appropriate certified technologies may be eligible for the CE, CA or PBR onsite treatment tiers. As of April 1, 1999, there is one certified technology for these tiers. The certification is for aldehyde treatment processes and is eligible for the CESW tier. The approved technology is:

Technology	Vendor	Cert. #	Effective Date	Tier	Description
Neutralex	Scigen 333 East Gardena Blvd. Gardena, CA 90248	97-01-0024	629/97 (expires 6/29/00)	CESW	Batch treatment for 10 percent Formalin generated by medical, educational, and laboratory facilities. Chemically treats in a provided 8 liter vessel. After testing, allows for disposal to sanitary sewer.

A copy of published Certification Statements and additional updates may be obtained by contacting DTSC at (916) 322-3670 or from the Cal/EPA on-line Bulletin Board via modem at (916) 322-5041.

Process Description
Ultra High Vacuum Cleaning Facility & Fixed Treatment Unit FTU 006 LBNL - Building 77

The Ultra High Vacuum Cleaning Facility (UHVCF) at building 77 conducts treatment of aluminum and non-aluminum metal parts through cleaning and/or application of a satin finish (desmut bath and rinse). An estimated maximum of 10,000 gallons/month of wastewater associated with these various processes are treated in the Fixed Treatment Unit, FTU 006. The wastewater is generated from rinse tanks and process equipment pieces within the UHVCF.

An acid waste is generated by six flow-through rinse tanks. The effluent from the rinse tanks flows to a dedicated acid sump and then is pumped to FTU 006 for treatment. These rinse tanks rinse parts which come from the following baths:

- chromic/nitric acid bright dip bath
- sulfuric/nitric acid bright dip bath
- hydrochloric acid bath (pickling)
- phosphoric/sulfuric acid bath (stainless steel electropolish)
- sodium bisulfate bath (oxide remover, desmut)
- hydrofluoric acid bath
- electroless nickel bath
- blue anodize bath
- black anodize bath
- iridite 14-2 bath
- nickel acetate seal bath
- sulfuric acid anodize bath
- ferric chloride etch rinse water (Chemcut Etcher)

An alkaline waste, typically below pH 12 at the point of generation, is generated from two flow-through rinse tanks. The effluent from the rinse tanks flows to a dedicated caustic sump and then is pumped to FTU 006 for treatment. These rinse tanks rinse parts which come from the following baths:

- sodium hydroxide bath (caustic etch)
- sodium hydroxide/acetylsalicylic acid/zinc oxide bath (B.N. cleaner)

An additional alkaline waste from Building 77H, typically below pH 12 at the point of generation, is generated from a couple of processes: Riston Stripper and Silk-Screening Cleaner. Parts are rinsed from these two processes in the sink in Building 77H which flows to a caustic sump (sump #2) in Building 77, room 156, and then is pumped to FTU 006 for treatment. The alkaline waste from Building 77 H is generated from the following process:

- Potassium Hydroxide (Riston Stripper)
- Sodium Hydroxide (Silk-Screening cleaner)

Process Description
~~Ultra High Vacuum Cleaning Facility &~~
Fixed Treatment Unit FTU 006
LBNL - Building 77

Additional non-routine bench top processes may also contribute to the acid/metals waste stream. A non-routine bench top process could involve nickel plating a small part in a 250 milliliter beaker and then dipping the part in a rinse water bath (which drains to the acid sump) for cleaning. Another non-routine bench top process could involve brush plating a small area (e.g. 4 square inches) of a large part to repair that part. This large part would then be dipped into a rinse water bath (which drains to the acid sump) for cleaning.

The Fixed Treatment Unit, FTU 006, provides the following treatment to rinse water:

- Sodium metabisulfite and sodium hydroxide are added automatically for hexavalent chromium reduction.
- Neutralization of the wastewater occurs through automatic pH adjustment.
- Metals removal occurs through flocculation with a polyelectrolyte and clarification.
- Sludge is dewatered in a filter press.
- Filter cake is dried in a low temperature, closed loop air handling system (J-Mate Batch Dryer).

The Fixed Treatment Unit, FTU 006, treats two waste streams coming from the B77 UHVCF. One waste stream contains metals, hexavalent chromium, and typically has a pH below 2 (acid sump). The second waste stream contains a mixture of bases (caustic sump).

Tank 4, an acid rinse storage tank, receives incoming acid rinse water from the B77 UHVCF acid sump. The acid wastewater from Tank 4 flows to Tank 5A, where the acid waste is neutralized with sodium hydroxide and hexavalent chromium is reduced with the addition of sodium metabisulfite. The acid wastewater flows from Tank 5A to Tank 5B. Tank 5B provides further neutralization with sodium hydroxide and further reduction of hexavalent chromium with sodium metabisulfite. Tank 3 receives incoming alkaline waste from the B77 caustic sump. The alkaline wastewater from Tank 3 flows to Tank 6, where the alkaline wastewater is neutralized with sulfuric acid.

After pH adjustment, the wastewater from Tank 5B flows into Tank 6 and Tank 6 flows into Tank 7, a flocculation tank, where, with the addition of a flocculating agent and a polyelectrolyte coagulant, the dissolved metals begin to form a flocculent. The wastewater/flocculent flows into Tank 8, a clarifier, where the flocculent is thickened and removed. The removed flocculent or sludge flows to a filter press, where the sludge is dewatered. The water from the filter press is pumped back to Tank 4 (the acid rinse storage tank), where the treatment process begins, and is then treated to remove any metals.

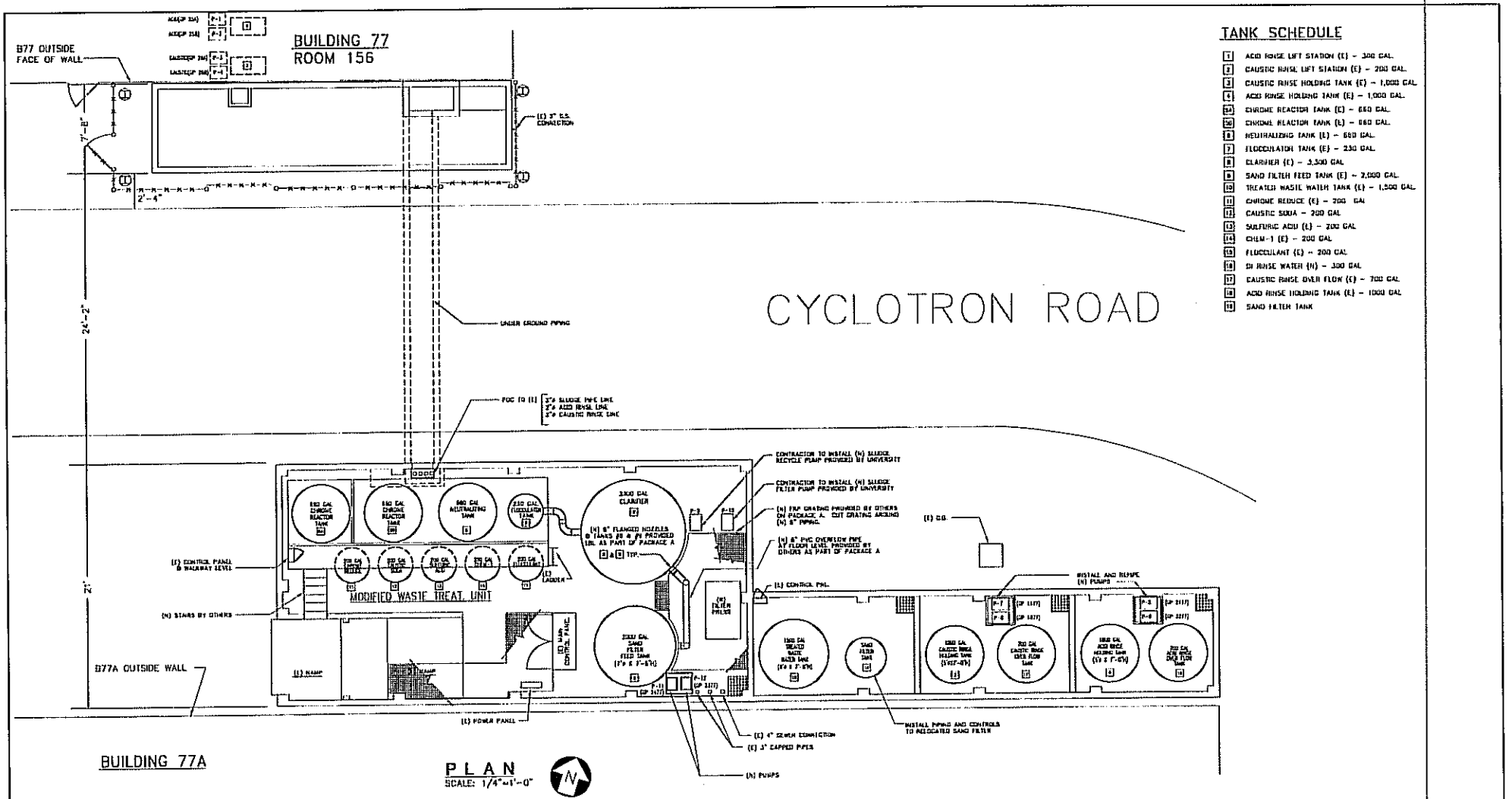
The treated wastewater exits Tank 8 and flows to Tank 9, an effluent storage tank. The treatment system has been designed to meet East Bay Municipal Utility District (EBMUD) discharge limits once the treated wastewater leaves Tank 9. However, a sand filter (Tank 19), which will reduce metal concentration further, has been placed between Tank 9 and the point of sewer discharge. For maintenance purposes, the sand filter may be bypassed if necessary. The sand filter is the first piece of equipment required for a future recycling system that will recycle all wastewater back to the B77 UHVCF. The sand filter

Process Description
Ultra High Vacuum Cleaning Facility &
Fixed Treatment Unit FTU 006
LBNL - Building 77

(Tank 19) is backwashed into Tank 10 during B77 UHVCF off hours. The backwash from Tank 10 is pumped to Tank 3 and then to Tank 6 & 7, where neutralization and then flocculation to precipitate metals occurs.

To ensure contaminant levels do not exceed permissible levels established in EBMUD's discharge requirements, wastewater discharged to EBMUD is periodically sampled and analyzed according to a schedule determined annually upon EBMUD permit renewal, currently four times per year.

This treatment process generates a sludge which contains metals. The sludge is dewatered in a filter press. The resulting filter cake is then put in a low heat batch dryer (US Filter, J-Mate, model J-203) to further remove water. The dried filter cake, a residual hazardous waste, typically contains cadmium, chromium, and lead. The filter cake is collected in a 55-gallon drum for transportation. The waste drum of filter cake is picked up by Waste Management staff and taken to the Hazardous Waste Handling Facility (HWHF). The filter cake waste is stored at the HWHF until analytical test results are received to fully characterize the waste. Then the waste drum is prepared for shipment off-site by Waste Management staff so that the waste may undergo further treatment. Shipment off-site is by a registered hazardous waste hauler. An estimated maximum of 200 pounds of filter cake is generated per year.



THIS DRAWING SUPERSEDED VENDOR's DRAWING NO. 169-B-M2

AS-BUILT REV. A 02/26/2008

77 UPGRADE WASTE TREATMENT NEW PLAN

UNIVERSITY OF CALIFORNIA LAWRENCE BERKELEY NATIONAL LABORATORY FACILITIES DIVISION

4B77M371A

M-2

Strangio and Associates
CIVIL & ENVIRONMENTAL ENGINEERS
1789 Cottle Ave.
San Jose, CA 95125

(408) 978-9604 FAX (408) 448-5284

3-7-96

Mr. Pablo Orozco, Project Manager
Operation Division, Facilities Department
Lawrence Berkeley Laboratory
1 Cyclotron Road
Berkeley, Ca. 94720

Ref: Certification of Containment and Tankage for PBR Authorization

Dear Mr. Orozco:

Based on my onsite visits and examination of the containment and tankage(DMP Waste Water Treatment System) located at Building 77 as well as design drawings I found the following conditions.

For the purposes of this certification the treatment system consists of the transfer tankage, pumps, piping, and containment of the units which transfer wastewater to the treatment system as well as the descrete treatment system and it containment.

The containment consists of coated concrete vaults of sufficient size to contain the volumes required under the containment quidelines. The vaults are located under an overhanging roofs, and all the areas are equipped with a fire suppression sprinkler system consisting of area sprinklers as well as duct sprinklers(where applicable).

The treatment area tanks are all constructed of fiberglass/epoxy with builtin earthquake restraining clips. They were fabricated and installed approximately 10 years ago, however they were never put into use. They appear to be in a like new condition and can be expected to have an extended service life. It would be prudent to carry out periodic inspections to be assured that there is no delamination, or exposed fibers that need to be recoated.

The attached stamped list constitute the tanks which are a part of this certification under the following regulations:

Title 22, Code of California Regulations(CCR):

Section 6626.175(c) Containment

The containment system as presently configured is suitably designed to contain and control leaks,spills,,and sprinkler flows.

Section 66265.192(a)(1) Design Standards
Meets the required design standards

Section 66265.192(a)(2) Hazardous Characteristics of Waste

The systems are compatible with the chemicals being treated.

Section 66265.192(a)(3) Corrosion Protection

Meets all regulatory requirements and should not be adversely affected in any way.

Section 66265.192(a)(4) Underground Protection

Appears to meet regulatory requirements based on the inspection.

Section 66265.192(a)(5) Foundation and Seismic Design

Appears to meet regulatory requirements based on the inspection.

Section 66265.193(c)(2) Compatibility, Strength, and Thickness

The structural integrity of the concrete containment structure appears to meet regulatory requirements based on the inspection.

Section 66265.193(c)(3) Leak Detection and Alarm

Appears to meet regulatory requirements based on inspection.

Section 66265.193(e)(2) Volume and Draining of Secondary Containment

Adequate volume is provided.

Section 66265.193(e)(2) Freedom from Gaps and Cracks in the Secondary Containment

Gaps and cracks previously noted have been repaired and the coating now meets the regulatory requirements.

I hereby certify that the referenced system and containment meets the requirements of Title 22.(See attached Tank List)

Yours Truly

William Strangio, D.Sc., P.E.

TANKAGE IN MAIN CONTAINMENT

Tank Number		MAT.	CONDITION
5 - Chrome Treatment Tank	- 600 gal	FG	Good
6 - Neutralizing Tank	- 680 gal	"	"
7 - Flocculation Tank	- 230 gal	"	"
8 - Clarifier	- 3,300 gal	"	"
9 - Effluent Storage	- 2,000 gal	"	"
Total Volume in this area	- 6,810 gal		

TANKAGE IN FILTER AREA

10 - Backwash storage	- 1,500 gal	"	"
Filter	- 200 gal	Steel	New
Total volume in this area	- 1,700 gal		

TANKAGE IN ACID RINSE AREA

3 - Acid rinse storage	- 1,000 gal	FG	Good

TANKAGE IN CAUSTIC RINSE STORAGE

4 - Caustic rinse storage	- 1,000 gal	"	"

TANKAGE IN UHVF SHOP

ACID - Diliute Rinse	- 130 gal	Polypro	New
CAUSTIC - Dilute Rinse	- 130 gal	"	"
DI RINSE - Dilute Rinse	- 130 gal	"	"

	STORAGE GAL	AREA SF	SPRINKLER GALS(in 20 min)
MAIN CONTAINMENT AREA	5245	701	2103
BACKWASH STORAGE CON.	2623	117	351
ACID RINSE STOR. CON.	2480	111	333
CAUSTIC RINSE STOR. CON.	2241	100	300
UHVF SHOP CON	10790	1500	8500

Strangio and Associates
CIVIL & ENVIRONMENTAL ENGINEERS
1789 COTTLE AVE.
SAN JOSE, CA 95125

(408) 978-9604 FAX (408) 448-5284

9-21-99

Mr. Lonnie Simonian Project Manager
Operation Division, Facilities Department
Lawrence Berkeley Laboratory
1 Cyclotron Road
Berkeley, Ca. 94720

Ref: Certification of Additional Tankage for PBR Authorization - Bldg.77

Dear Mr.Simonian:

Based on my onsite visit of 9-18-99, and a detailed examination of the four tanks not previously certified of the tankage which constitutes a portion of the DMP provided Waste Water Treatment System, located at Building 77, as well as a review of system drawings I found the following conditions.

For the purposes of this certification, the additional four tanks consists of: an existing, but not actively used tank which has been re-piped and equipped to perform an addition stage of Chrome Reduction, there by increasing the nominal treatment capacity. The second tank consists of an existing tank which was already in service(and previously certified) which has been modified by the addition of a settling cone and the addition of sludge removal piping through the tank wall. The third and fourth tanks, were the addition of two existing tanks(unused) to serve the purpose of providing more storage capacity as "overflow" tanks, thereby increasing the margin of safety for storage of wastewater flows.

It should be pointed out that when this Building was previously certified in March of 1996, the tankage mentioned above was included in that certification of containment and tankage, however all four tanks are being used for different purposes or have been modified in some way.

The attached stamped list constitute the tanks which are a part of this certification under the following regulations: Title 22, Code of California Regulations(CCR):

Section 66265.175(c) Containment - The containment system as presently configured is suitably designed to contain and control leaks, spills, and sprinkler flows.

Section 66265.192(a)(1) Design Standards - Meets the required design standards

Section 66265.192(a)(2) Hazardous Characteristics of Waste -The systems are compatible with the chemicals being treated.

Section 66265.192(a)(3) Corrosion Protection-Meets all regulatory requirements and should not be adversely affected in any way.

Section 66265.192(a)(4) Underground Protection - Appears to meet regulatory requirements based on the inspection.

Section 66265.192(a)(5) Foundation and Seismic Design - Appears to meet regulatory requirements based on the inspection.

Section 66265.192(k) Tank System Assessment - The tanks are described on the attached pages and comply with the information requested.

Section 66265.193(c)(2) Compatibility, Strength, and Thickness - The structural integrity of the concrete containment structure appears to meet regulatory requirements based on the inspection.

Section 66265.193(c)(3) Leak Detection and Alarm - Appears to meet regulatory requirements based on inspection.

Section 66265.193(e)(2) Volume and Draining of Secondary Containment - Adequate volume is provided.

Section 66265.193(e)(2) Freedom from Gaps and Cracks in the Secondary Containment - Gaps and cracks previously noted have been repaired and the coating now meets the regulatory requirements.

I hereby certify that the referenced system and containment meets the requirements of Title 22. (See attached Tank List)

Yours Truly

William Strangio, D.Sc., P.E.

cc. Robert Fox

TANK CERTIFICATION INSPECTION REPORT
SEPTEMBER 1999

TANK NAME - Chrome Reactor Tank - T 5A MANUFACTURER - Red Ewald Co.

COMPANY SERIAL NUMBER - #20842 NOMINAL CAPACITY - 660 gallons

DIMENSIONS - 58" dia. X 54" H to rim YEAR of MANUF. - 1989

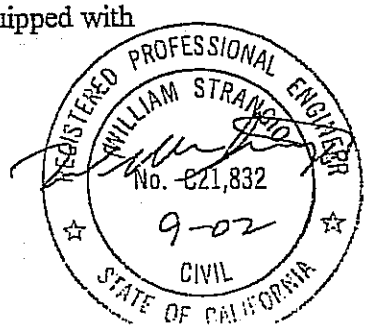
DESCRIPTION - The tank is a laminated fiberglass and epoxy resin open top cylindrical vertical tank, which is equipped with four(4) holdown clips. The nominal wall thickness is 1/2", with bottom edge banding of approximately 1" thickness where the holddown clips are located. The upper edge of the tank has a 2" wide rim, to which is attached a polypro sectional tank cover. Influent waste pipes and recirculation lines enter the tank through the upper cover. There is one(1) 4" diameter line leaving the side of the tank for connection to Tank 5 B. The tank exterior is painted grey and is labeled with colored labels of sufficient size. The manufacturer has attached a stainless steel identification plate to the tank. The tank is in excellent condition, with no evidence of delamination or degradation of any type.

Both the tank materials and the connecting piping are composed of materials which are impervious to long term exposures to the wastewater components and the treatment chemicals

The tank can be expected to have an extended service life of an additional 10 to 15 years, even though it is now 10 years old.

Periodic inspections(on a yearly basis) should be a standard practice. to determine the tanks condition and also the state of the piping connected to the tank(which is in like new condition).

The tank is located within the main secondary containment berm which houses most of the treatment system components. It is supported by and anchored to metal stands(which in turn are anchored to the base slab), which provides for gravity flow through the system to a post clarification holding tank. The secondary containment berm is equipped with sensors to detect liquid leaks.



TANK NAME - Clarifier Tank MANUFACTURER - Red Ewald Co.

COMPANY SERIAL NUMBER - #20901 NOMINAL CAPACITY - 3300 gallons

DIMENSIONS - 107" dia. X 84" H to rim YEAR of MANUF. - 1989

DESCRIPTION - The tank is a laminated fiberglass and epoxy resin open top cylindrical vertical tank, which is equipped with eight(8) hold down clips. The nominal wall thickness is 3/4", with bottom edge banding of approximately 11/4" thickness where the holddown clips are located. Because of the height of the tank side wall, the tank restraints are anchored directly to the coated concrete base slab. The upper edge of the tank has a 3" wide rim from which the tanks outlet weir is suspended. Influent waste pipes and effluent pipes are attached to the tank walls at height of 40" from grade. There are two(2)3" diameter blind flanged outlets on opposite sides of the tank, and two(2) 6" diameter lines located at approximately 90 degree from each other which constitute the influent and effluent lines. In addition there are two(2") diameter sludge lines at the bottom edge of the tank. The tank exterior is painted grey and is labeled with colored labels of sufficient size. The manufacturer has attached a stainless steel identification plate to the tank. The tank is in excellent condition, with no evidence of delamination or degradation of any type. The tank can be expected to have an extended service life of an additional 10 to 15 years, even though it is now 10 years old.

Both the tank materials and the connecting piping are composed of materials which are impervious to long term exposures to the wastewater components and the treatment chemicals.

Just prior to the certification inspection a cone insert had been added to the interior of the tank to improve the removal of the settling sludge. The cone was fabricated of an epoxy/fiberglass laminate. It is expected that the cone shall have a service life identical to the tank.

Periodic inspections(on a yearly basis) should be a standard practice. to determine the tanks condition and also the state of the piping connected to the tank(which is presently in a like new condition).

TANK NAME - ACID RINSE OVERFLOW TANK T 18 MANUF. - Red Ewald Co.

COMPANY SERIAL NUMBER - #20837 NOMINAL CAPACITY - 730 gallons

DIMENSIONS - 60" dia. X 60" H to rim YEAR of MANUF. - 1989

DESCRIPTION - The tank is a laminated fiberglass and epoxy resin open top cylindrical vertical

tank, which is equipped with four(4) holdown clips, which hold the tank directly to the coated concrete base slab. The nominal wall thickness is 1/2", with bottom edge banding of approximately 1" thickness where the holdown clips are located. The upper edge of the tank has a 2" wide rim, to which is attached a polypro sectional tank cover. An Influent waste overflow line enters the tank through the upper cover. There is one(1) 1 1/2" diameter line leaving the side of the tank near the bottom for connection to the transfer pumps. The tank exterior is painted grey and is labeled with colored labels of sufficient size. The manufacturer has attached a stainless steel identification plate to the tank. The tank is in excellent condition, with no evidence of delamination or degradation of any type. The tank can be expected to have an extended service life of an additional 10 to 15 years, even though it is now 10 years old.

Both the tank materials and the connecting piping are composed of materials which are impervious to long term exposures to the wastewater components and the treatment chemicals

Periodic inspections(on a yearly basis) should be a standard practice. to determine the tanks condition and also the state of the piping connected to the tank(which is in a like new condition).

As described by its title the tank serves the purpose of containing any "overflows" beyond the capacity of the primary receiver tank. Both tanks are located inside their own secondary containment berm, which is equipped with liquid sensors, to detect spills of liquids into the secondary containment.

TANK NAME - CAUSTIC RINSE OVERFLOW TANK T 11 MANUF. - Red Ewald Co.

COMPANY SERIAL NUMBER - #20836 NOMINAL CAPACITY - 730 gallons

DIMENSIONS - 60" dia. X 60" H to rim YEAR of MANUF. - 1989

DESCRIPTION - The tank is a laminated fiberglass and epoxy resin open top cylindrical vertical tank, which is equipped with four(4) holdown clips, which hold the tank directly to the coated concrete base slab. The nominal wall thickness is 1/2", with bottom edge banding of approximately 1" thickness where the holdown clips are located. The upper edge of the tank has a 2" wide rim, to which is attached a polypro sectional tank cover. An Influent waste overflow line enters the tank through the upper cover. There is one(1) 1 1/2" diameter line leaving the side of the tank near the bottom for connection to the transfer pumps. The tank exterior is painted grey and is labeled with colored labels of sufficient size. The manufacturer has attached a stainless steel identification plate to the tank. The

tank is in excellent condition, with no evidence of delamination or degradation of any type. The tank can be expected to have an extended service life of an additional 10 to 15 years, even though it is now 10 years old.

Both the tank materials and the connecting piping are composed of materials which are impervious to long term exposures to the wastewater components and the treatment chemicals

Periodic inspections(on a yearly basis) should be a standard practice. to determine the tanks condition and also the state of the piping connected to the tank(which is in a like new condition).

As described by its title the tank serves the purpose of containing any "overflows" beyond the capacity of the primary receiver tank. Both tanks are located inside their own secondary containment berm, which is equipped with liquid sensors, to detect spills of liquids into the secondary containment.

UNIFIED PROGRAM CONSOLIDATED FORM
HAZARDOUS WASTE

ONSITE HAZARDOUS WASTE TREATMENT NOTIFICATION – UNIT PAGE

(One page and attachments per unit)

FACILITY ID#	1.	BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As)	3.
		Lawrence Berkeley National Laboratory	

I. TREATMENT UNIT

UNIT ID# 606.	UNIT TYPE/TIER 607.	NUMBER OF TANKS 608.	NUMBER OF CONTAINERS/ TREATMENT AREAS 609.
FTU 007	☐ a. CESQT ☐ b. CESW ☐ c. CA ☒ d. PBR ☐ e. CEL	4	4
UNIT NAME 610.	**MONTHLY TREATMENT VOLUME 611.**	**UNIT OF MEASURE 612.**	
Building 67 Molecular Foundry FTU	3450	☐ a. Pounds ☒ b. Gallons	

SPECIFIC WASTE TYPE TREATED (narrative) 613.

Inorganic acid and alkaline wastes.

TREATMENT PROCESS DESCRIPTION (narrative) 614.

Neutralization by pH adjustment. For a detailed process description see, "Process Description, Collection and Treatment of Acidic and Alkaline Waste, Molecular Foundry Nanofabrication Facility, November 29, 2007."

(NOTE: For each treatment unit, complete and attach the appropriate Waste and Treatment Process Combinations page.)

II. BASIS FOR NOT NEEDING FEDERAL PERMIT (Check all that apply)

615.

☐ a. The treated waste is not a hazardous waste under federal law (California-only waste).

☒ b. Treated in waste water treatment units (tanks) and discharged to a publicly owned treatment works (POTW)/sewering agency or under an NPDES permit.

☒ c. Treatment in elementary neutralization units.

☐ d. Treatment in a totally enclosed treatment facility.

☐ e. Federal conditionally exempt small quantity generator (generated 100 kg., approximately 27 gallons, or less of hazardous waste in a calendar month).

☐ f. Treatment in an accumulation tank or container within 90 days for over 1,000 kg./month generators and 180 or 270 days for generators of 100 to 1,000 kg./month.

☐ g. Recyclable materials are reclaimed to recover silver or other precious metals.

☐ h. Empty container rinsing and/or treatment.

☐ i. Other (specify below)

III. RESIDUALS MANAGEMENT DESCRIPTION (Check all that apply)

616.

☒ a. Discharge non-hazardous aqueous waste to POTW or sewer.

☐ b. Discharge non-hazardous aqueous waste under a NPDES permit.

☐ c. Dispose of non-hazardous solid waste residues at an offsite location.

Residual hazardous waste hauled offsite by a registered hauler.

☐ d. Offsite recycling
☐ e. Thermal treatment
☐ f. Disposal to land
☐ g. Further treatment
☐ h. Other method of disposal (describe below)

SECONDARY CONTAINMENT INSTALLATION DATE (If required) 617.

Onsite Hazardous Waste Treatment Notification – Unit
[(Formerly DTSC Form 1772A,B,C,D,L)]

Complete an Onsite Hazardous Waste Treatment Notification - Unit page and a Waste and Treatment Process Combinations page for each treatment unit operating at this facility. Commercial Laundries are not required to complete unit specific pages, provided that laundering is the only hazardous waste treatment activity conducted by the facility. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

1. FACILITY ID NUMBER - This space is for agency use only.
3. BUSINESS NAME - Enter the complete Facility Name.
606. UNIT ID NUMBER - Enter a unique number for each unit. All unit numbers must be clearly labeled on the plot plan/map.
607. UNIT TYPE / TIER - Check the appropriate box to indicate unit type under the Tiered Permitting program.
608. NUMBER OF TANKS - Enter the number of tanks used in the unit. ["Tank" means a stationary device, designed to contain an accumulation of hazardous waste, which is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) which provide structural support.]
609. NUMBER OF CONTAINERS/TREATMENT AREAS - Enter the number of containers/container treatment areas used in the unit. ["Container" means any device that is open or closed, and portable in which a material can be stored, handled, treated, transported, disposed of, or recycled.] "Treatment Area" is a location set aside and used to treat waste in containers.
610. UNIT NAME - Enter the name of the treatment unit. A treatment unit is defined as a tank, a container, or a combination of tanks or tank systems and/or containers located together that are used in sequence to treat or accumulate one or more compatible hazardous waste streams. The devices are either plumbed together or otherwise linked so as to form one system.
611. MONTHLY TREATMENT VOLUME - Enter the estimated monthly total volume of hazardous waste treated in this unit. If the volume fluctuates significantly by month, enter the maximum volume treated in any month.
612. UNIT OF MEASURE - Check a box to indicate whether the treatment volume unit of measure is pounds or gallons.
613. SPECIFIC WASTE TYPE TREATED - Describe the specific waste type(s) treated (e.g. If the waste qualifies as an aqueous waste with metals or organics, indicate the specific metals or organics).
614. TREATMENT PROCESS DESCRIPTION - Describe the treatment process(es) used. Indicate if the activities are seasonal or periodic.
615. BASIS FOR NOT NEEDING FEDERAL PERMIT - Check the reason(s) that best describe why your onsite treatment unit does not need a federal hazardous waste permit. You must indicate at least one reason to prove your eligibility for the onsite treatment tiers. If you are unsure how these exemptions apply to your operation, contact your Certified Unified Program Agency (CUPA), the DTSC Regional Office closest to you, the U.S. EPA Region IX RCRA Information Line at (415) 744-2074, or the U.S. EPA RCRA Hotline at (800) 424-9346. The eight most common reasons for not needing a federal permit are listed on this form. There is also a space to specify any other reason for exemption and a supporting regulatory citation. The following terms are defined in 40 CFR §260.10:

    Wastewater Treatment Unit - A device which: (1) is part of a wastewater treatment facility regulated under section 402 or 307(b) of the Clean Water Act, and (2) receives and treats or stores an influent wastewater that is a hazardous waste or that generates and accumulates a wastewater treatment sludge that is a hazardous waste or that treats or stores a wastewater treatment sludge which is a hazardous waste, and (3) meets the definition of tank or tank system.

    Elementary Neutralization Unit - A device which (1) is used for neutralizing wastes that are hazardous only because they exhibit the corrosivity characteristic or they are listed only for this reason, and (2) meets the definition of tank, tank system, container, transport vehicle, or vessel.

    Totally Enclosed Treatment Facility - A facility for the treatment of hazardous waste which is directly connected to an industrial production process and which is constructed and operated in a manner which prevents the release of any hazardous waste or any constituent thereof into the environment during treatment.

    NPDES Permit - A permit issued by a regional water board allowing discharge of waste to the environment under the National Pollutant Discharge Elimination System (NPDES).
616. RESIDUALS MANAGEMENT DESCRIPTION - Check the appropriate box(es) to describe how treatment residuals are managed. If box h. is checked, describe the "other" methods in the space provided.
617. SECONDARY CONTAINMENT INSTALLATION DATE - Enter the date the secondary containment was installed.

UNIFIED PROGRAM CONSOLIDATED FORM
ONSITE TIERED PERMITTING

PERMIT BY RULE (PBR) PAGE

WASTE AND TREATMENT PROCESS COMBINATIONS

(One page per treatment unit. Check all that apply)

606.	1.	
UNIT ID# FTU 007	Facility ID#	Page 40 of 49

630.

1. Aqueous wastes containing hexavalent chromium may be treated by the following process:
Reduction of hexavalent chromium to trivalent chromium with sodium bisulfite, sodium metabisulfite, sodium thiosulfate, ferrous sulfate, ferrous sulfide or sulfur dioxide provided
☐ a. both pH and addition of the reducing agent are automatically controlled.

2. Aqueous wastes containing metals listed in Title 22, CCR, Section 66261.24 (a)(2) and/or fluoride salts may be treated by the following technologies:
☐ a. pH adjustment or neutralization.
☐ b. Precipitation or crystallization.
☐ c. Phase separation by filtration, centrifugation or gravity settling.
☐ d. Ion exchange.
☐ e. Reverse osmosis.
☐ f. Metallic replacement.
☐ g. Plating the metal onto an electrode.
☐ h. Electrodialysis
☐ i. Electrowinning or electrolytic recovery
☐ j. Chemical stabilization using silicates and/or cementitious types of reactions.
☐ k. Evaporation.
☐ l. Adsorption

3. Aqueous wastes with total organic carbon less than 10% as measured by EPA Method 9060 and less than 1% total volatile organic compounds as measured by EPA Method 8240 may be treated by the following technologies::
☐ a. Phase separation by filtration, centrifugation or gravity settling, but excluding super critical fluid extraction.
☐ b. Adsorption.
☐ c. Distillation.
☐ d. Biological processes conducted in tanks or containers and utilizing naturally occurring microorganisms.
☐ e. Photodegradation using ultraviolet light, with or without the addition of hydrogen peroxide or ozone, provided the treatment is conducted in an enclosed system.
☐ f. Air stripping or steam stripping.

4. Sludges, dusts, solid metal objects and metal workings which contain or are contaminated with metals listed in Title 22, CCR, Section 66261.24 (a)(2) and/or fluoride salts may be treated by the following technologies:
☐ a. Chemical stabilization using silicates and/or cementitious types of reactions.
☐ b. Physical processes which change only the physical properties of the waste such as grinding, shredding, crushing or compacting.
☐ c. Drying to remove water.
☐ d. Separation based on differences in physical properties such as size, magnetism or density.

5. Alum, gypsum, lime, sulfur or phosphate sludges may be treated by the following technologies:
☐ a. Chemical stabilization using silicates and/or cementitious types of reactions.
☐ b. Drying to remove water.
☐ c. Phase separation by filtration, centrifugation or gravity settling.

Wastes identified in Title 22, CCR, Section 66261.120, that meet the criteria and requirements for special waste classification in Section 66261.122 may be treated by the following technologies:
☐ a. Chemical stabilization using silicates and/or cementitious types of reactions.
☐ b. Drying to remove water.
☐ c. Phase separation by filtration, centrifugation or gravity settling.
☐ d. Screening to separate components based on size.
☐ e. Separation based on differences in physical properties such as size, magnetism or density.

7. Wastes, except asbestos, which have been classified by the Department as special wastes pursuant to Title 22, CCR, Section 66261.124, may be treated by the following technologies:
☐ a. Chemical stabilization using silicates and/or cementitious types of reactions.
☐ b. Drying to remove water.
☐ c. Phase separation by filtration, centrifugation or gravity settling.
☐ d. Magnetic separation.

8. Inorganic acid or alkaline wastes may be treated by the following technology:
☒ a. pH adjustment or neutralization.

9. Soils contaminated with metals listed in Title 22, CCR, Section 66261.24(a)(2), (Persistent and Bioaccumulative Toxic Substances) may be treated by the following technologies:
☐ a. Chemical stabilization using silicates and/or cementitious types of reactions.
☐ b. Screening to separate components based on size.
☐ c. Magnetic separation.

10. Used oil, unrefined oil waste, mixed oil, oil mixed with water and oil/water separation sludges may be treated by the following technologies:
☐ a. Phase separation by filtration, centrifugation or gravity settling, but excluding super critical fluid extraction.
☐ b. Distillation.
☐ c. Neutralization.
☐ d. Separation based on differences in physical properties such as size, magnetism or density.
☐ e. Reverse osmosis.
☐ f. Biological processes conducted in tanks or containers and utilizing naturally occurring microorganisms.

11. Containers of 110 gallons or less capacity which are not constructed of wood, paper, cardboard, fabric, or any other similar absorptive material, which have been emptied as specified in Title 40 of the Code of Federal Regulations, section 261.7 or inner liners removed from empty containers that once held hazardous waste or hazardous material and which are not excluded from regulation may be treated by the following technologies provided the treated containers and rinseate are managed in compliance with applicable requirements.
☐ a. Rinsing with a suitable liquid capable of dissolving or removing the hazardous constituents which the container held.
☐ b. Physical processes such as crushing, shredding, grinding or puncturing, that change only the physical properties of the container or inner liner, provided the container or inner liner is first rinsed and the rinseate is removed from the container or inner liner.

12. Multi-component resins may be treated by the following process:
☐ a. Mixing the resin components in accordance with the manufacturer's instructions.

A waste stream technology combination certified by the Department pursuant to Section 25200.1.5 of the Health and Safety Code as appropriate for authorization under Permit by Rule.
☐ Certified Technology Number: _____

Waste and Treatment Process Combinations Form PBR Instructions
(Formerly DTSC Form 1772D)

This Waste and Treatment Process Combinations page lists those waste and treatment combinations certified by the Department of Toxic Substances Control (DTSC) pursuant to Health and Safety Code (H&SC) §25200.1.5 for authorization under the Permit by Rule (PBR) tier. (Note: Reactive and extremely hazardous wastes are not allowed to be treated under this tier.)

Complete a separate Waste and Treatment Process Combinations page for each unit. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

606. UNIT ID NUMBER - Enter the unit ID number (same as item 606 from the Onsite Hazardous Waste Treatment Notification - Unit form).

1. FACILITY ID NUMBER - This space is for agency use only.

630. WASTE AND TREATMENT PROCESS COMBINATIONS (PBR) - Use this page only for a PBR unit. Check the appropriate boxes to indicate the waste and treatment process(es) that pertain to the unit. If the process is a technology certified by DTSC, enter the Certified Technology Number (Cert. #). Certified technologies appropriate for authorization, and the eligible tiers, are listed below.

CERTIFIED TECHNOLOGIES

DTSC is authorized to certify hazardous waste technologies. Appropriate certified technologies may be eligible for the CE, CA or PBR onsite treatment tiers. As of April 1, 1999, there is one certified technology for these tiers. The certification is for aldehyde treatment processes and is eligible for the CESW tier. The approved technology is:

Technology	Vendor	Cert. #	Effective Date	Tier	Description
Neutralex	Scigen 333 East Gardena Blvd. Gardena, CA 90248	97-01-0024	629/97 (expires 6/29/00)	CESW	Batch treatment for 10 percent Formalin generated by medical, educational, and laboratory facilities. Chemically treats in a provided 8 liter vessel. After testing, allows for disposal to sanitary sewer.

A copy of published Certification Statements and additional updates may be obtained by contacting DTSC at (916) 322-3670 or from the Cal/EPA on-line Bulletin Board via modem at (916) 322-5041.

Process Description
Collection and Treatment of Acidic and Alkaline Waste
Molecular Foundry Nanofabrication Facility
November 29, 2007

The waste collection and treatment system for the Molecular Foundry will process acid and alkaline waste from the wet process stations located on the second level, Nanofabrication Facility. In general, the wet process stations are used for etching and rinsing wafers. Etching removes the portions of the wafer that are not needed for that application. Wafers will vary in size from 4" to 8" in diameter, and multiple wafers may be handled in wafer "carriers" that stack the wafers vertically. The wafers come to the wet process station after having been coated, exposed and developed. Etching consists of placing the wafer into the container (tank, beaker or watch glass) of etchant, allowing the etchant to erode the substrate, and then stopping the operation by rinsing in water. Rinsing consists of filling the rinse tank with water, draining it, and refilling and draining multiple times, each time the rinse water contains less etchant (typically three cycles are used).

Periodically the etchant will need to be changed, which consists of removing the acid or alkaline etchant from the tank/beaker/watch glass using a water aspirator, and then refilling with fresh etchant.

Initially there will be two wet process stations connected to the collection and treatment system – one in which acidic etchants are used, and one in which alkaline etchants are used. The acidic etchants station contains two tanks in which the etchant is placed, and two separate rinse tanks. The alkaline etchants station contains one tank in which the etchant is placed, and one separate rinse tank. In addition, wet process stations include open benchtops in which small procedures may take place in beaker or watch-glass size quantities, and has an open lab sink as well.

Acidic etchants that may be used include but are not limited to the following:

- Hydrochloric acid (concentrated) (pKa = -7)
- Hydrofluoric acid (concentrated or 10% as Buffered Oxide Etchant) (pKa = 3.2)
- Nitric acid (concentrated) (pKa = -2)
- Phosphoric acid (concentrated) (pKa = 2.15)
- Piranha etch [3:1 concentrated sulfuric acid : hydrogen peroxide (typically 30%) solution]

Alkaline etchants that may be used include but are not limited to the following:

- Potassium hydroxide (approximately 40%, ~7.13 M) (pKb = <<0)

Details

Etch tanks, beakers and watch glasses are emptied using a water aspirator connected to a "stinger". The stinger is inserted into the container, and the vacuum created by the water aspirator lifts the etchant from the container, dissolves it into the running water, and sends the diluted etchant to the collection system.

Lawrence Berkeley National Laboratory
One Cyclotron Road, BLDG 85B0198 |Berkeley, California 94720-8282 |Tel: 510.486.7327 |Fax: 510.486.6603

The dilution ratio is a minimum 6:1 water:etchant, and can be configured higher[1]. Fresh water flush follows the etchant down the collection system.

Water rinses from the rinse cycle are sent directly to the collection system from a drain at the bottom of the rinse tank.

All connections to the collection system are controlled by valves. The aspiration, flush, and rinse cycles will be automated by controllers in the wet process stations, and the wet process stations will be interlocked so that only one station can deliver acid or alkaline waste to the collection system at a time. This will assure that the collection system has been thoroughly flushed so that potentially incompatible reactions do not occur within the collection system. In addition, these controllers will be programmed to prevent any tank dump or rinse cycle if the high level switch on the waste treatment system influent surge tank is activated.

Quantities and volumes represent maximum volumes:

- Volume of etch tank with a rinse insert: 9.5" D x 7.25" L x 8" W = .319 cubic feet = 2.39 gallons.
- Aspiration: assume water:etchant ratio of 6:1
- Post-aspiration flush: 3 pulses of 30 seconds @ 2.0 gpm, each followed by 40 seconds gravity flow, total volume = 1.5 minutes x 2.0 gpm = 3.0 gallons.
- Rinse: assume rinse tank size identical to etch tank, 3 rinses @ 2.39 gal/rinse = 7.2 gal
- Etchant dumps: assume 2/day acid, 1/day alkaline per bench, plus miscellaneous beakers of smaller quantities
- Rinse cycles: assume 4/day per bench (multiple batches can use the same etchant)
- Sink water: assume short duration, small quantity, deminimus relative to the programmed process flow.

Daily Average flow:

Acid: 2.39 gal x 7 (aspiration dilution) x 2/day x 1 bench =	33.5 gal
Alkali: 2.39 gal x 7 (aspiration dilution) x 1/day x 1 bench =	16.7 gal
Flush: (3.0 gal x 2/day) + (3.0 gal x 1/day) =	9.0 gal
Rinse: 7.2 gal x 4/day/bench x 2 benches =	57.4 gal
Total	116.6 gal

Average inflow (8-hour day) = 116.6 gal/480 min = 0.243 gpm

Hourly Peak Flow: Assume that in the peak hour the following occurs:

Two acid etches, each followed by a rinse cycle	
7.2 gal x 2 =	14.4 gal
One acid tank dump followed by a flush cycle	
(2.39 x 7) + 3.0	19.7 gal
One alkali etch followed by a rinse cycle	

[1] The 6:1 ratio has been assumed in these calculations as it is conservative. In all cases analyzed, a higher ratio will result in safer conditions.

Lawrence Berkeley National Laboratory
One Cyclotron Road, BLDG 85B0198 |Berkeley, California 94720-8282 |Tel: 510.486.7327 |Fax: 510.486.6603

7.2 x 1 = 7.2 gal

One alkali tank dump followed by a flush cycle

(2.39 x 7) + 3.0 19.7 gal

61.0 gal

Hourly process capability: 60 min x 5 gpm = 300 gal exceeds peak inflow.

Influent pH

Influent pH will be the pH of the aspirated tank dump, considering the flush. Minimum influent pH will be for hydrochloric and nitric acids (since pKa < 0, assume complete dissociation; phosphoric and hydrofluoric (especially buffered HF) are weaker acids). Maximum influent pH will be for 40% KOH solution.

Nitric: $HNO_3 \rightarrow H^+ + NO_3^-$ Reagent grade nitric acid is approx. 70% w/v

- D = 1.40 g/ml
- 1.40 g/ml x 0.70 = 0.980 g HNO3/ml
- 0.980 g/ml x 1000 ml/L x 1 mole/63.01 g = 15.56 mole/L
- At 6:1 dilution, conc = 2.22 mol/L (Note: this translates to 10 % w/v)
- Assume [HCl] ~ [H+] and pH = -log[H+]
- [H+] = 2.2, pH ~ 0

Hydrochloric: $HCl \rightarrow H^+ + Cl^-$ Reagent grade hydrochloric acid is approx. 37% w/v

- D = 1.19 g/ml
- 1.19 g/ml x 0.37 = 0.440 g HCl/ml
- 0.440 g/ml x 1000 ml/L x 1 mole/36.465 g = 12.07 mol/L
- At 6:1 dilution, conc = 1.7 mole/L
- Assume [HCl] ~ [H+] and pH = -log[H+]
- [H+] = 1.7, pH ~ 0

Potassium Hydroxide: $KOH \rightarrow K^+ + OH^-$

- 40% KOH = 400 g KOH/L
- 400 g/L x 1 mole/56.095 g = 7.131 mol/L
- At 6:1 dilution, conc = 1.02 mole/L
- Assume [KOH] ~ [OH^-], pOH = -log[OH^-] and pH = 14 - p[OH]
- [OH^-] = 1.02, pOH ~ 0, pH ~ 14

Temperature limitations

Influent temperature

Worst case is Pirhana etch @ 120°C

- Assume etch bath = 120°C = 393°K = 248°F
- Assume aspiration water = 13°C = 286°K = 55°F
- Average temperature is [(6 x 286) + 393]/7 = 301°K = 28.3°C = 83°F
- Assume water flush = 13°C = 286°K = 55°F

Temperature rise in influent surge tank

Lawrence Berkeley National Laboratory
One Cyclotron Road, BLDG 85B0198 |Berkeley, California 94720-8282 |Tel: 510.486.7327 |Fax: 510.486.6603

The worst case reasonable scenario is a discharge of Piranha solution (H_2SO_4/H_2O_2 3:1 acid) with two alkali (assume KOH) discharges and three flush cycles (flush after each discharge). A second but more likely scenario is a discharge of two HCL solutions and one discharge of a KOH solution with three flush cycles (flush after each discharge).

Assumptions that have been made in these calculations:

- The influent surge tank contains only product and flush water, no rinse (dilute) water;
- The influent surge tank begins at a temperature of approx. 72°F (22°C, 295°K);
- There is no heat lost through the wall of the influent surge tank during any neutralization reaction; all heat generated is absorbed by the liquid;
- The molar enthalpy of neutralization for a strong acid is -58.1 kJ/mole of hydrogen ion and 1kcal = 4.184kJ; and
- The specific heat of all liquids is assumed to be the same as pure water, ie, 1°C-L/kcal. The difference in specific heat between pure water and the dilute solutions considered here is deminimus.

1. One discharge of Piranha solution (H_2SO_4/H_2O_2 3:1 acid) with two alkali (assume KOH) discharges and three flush cycles (flush after each discharge).

   - Commercial H_2SO_4 is 18M (or 36N); a 3:1 mixture equals 13.5 M H_2SO_4. When discharged at 6:1 aspiration, H_2SO_4 concentration equals 1.93 M.
   - 16.7 gal (63.2 L) of 1.93 M H_2SO_4 → 122 moles H_2SO_4 → 244 moles H^+
   - 33.5 gal (126.8 L) of 1.02M KOH → 129 moles KOH
     - Heat of neutralization is limited by 129 moles of KOH; 57.5 moles of H_2SO_4 remain unneutralized
     - Followed by 3.0 gal (11.4 L) clean water flush/discharge = 34.1 L
   - 129 moles x -58.1 kJ/mole x 1 kcal/4.184 kJ = 1791 kcal liberated
   - Resultant mixture temperature without consideration of reaction heat is
     - [(63.2 L x 301°K)+(126.8 L x 295°K)+(34.1 L x 286°K)]/224.1 L = 295°K = 71.9°F
   - Reaction heat results in a temperature rise of
     - 1791 kcal x 1°C-L/kcal x 1.8 °F/°C x 1/224.1 L = <u>17.0°F</u>

   This scenario would result in a net concentration of unneutralized H_2SO_4 *acid of 0.26 moles/L at a temperature of approximately (71.9+17.0)= 88.9°F. Per the IPLEX Chemical Resistance Guide, polypropylene (surge tank walls are ½" polypropylene) shows high resistance at 140°F to 37% (12M) hydrochloric acid, 85% (14.7M) phosphoric acid, 10% (1.9M) sulfuric acid, and limited resistance to 20% (4.4M) nitric acid. Resistance to the much more dilute nitric acid is anticipated to be superior to that of the more concentrated form (this is confirmed by other chemical resistance charts). The chemical resistance of polypropylene exceeds that required by the resulting unneutralized* H_2SO_4 *acid.*

Lawrence Berkeley National Laboratory
One Cyclotron Road, BLDG 85B0198 |Berkeley, California 94720-8282 |Tel: 510.486.7327 |Fax: 510.486.6603

2. The more typical scenario is two discharges of HCL solutions and one discharge of a KOH solution with three flush cycles (flush after each discharge).

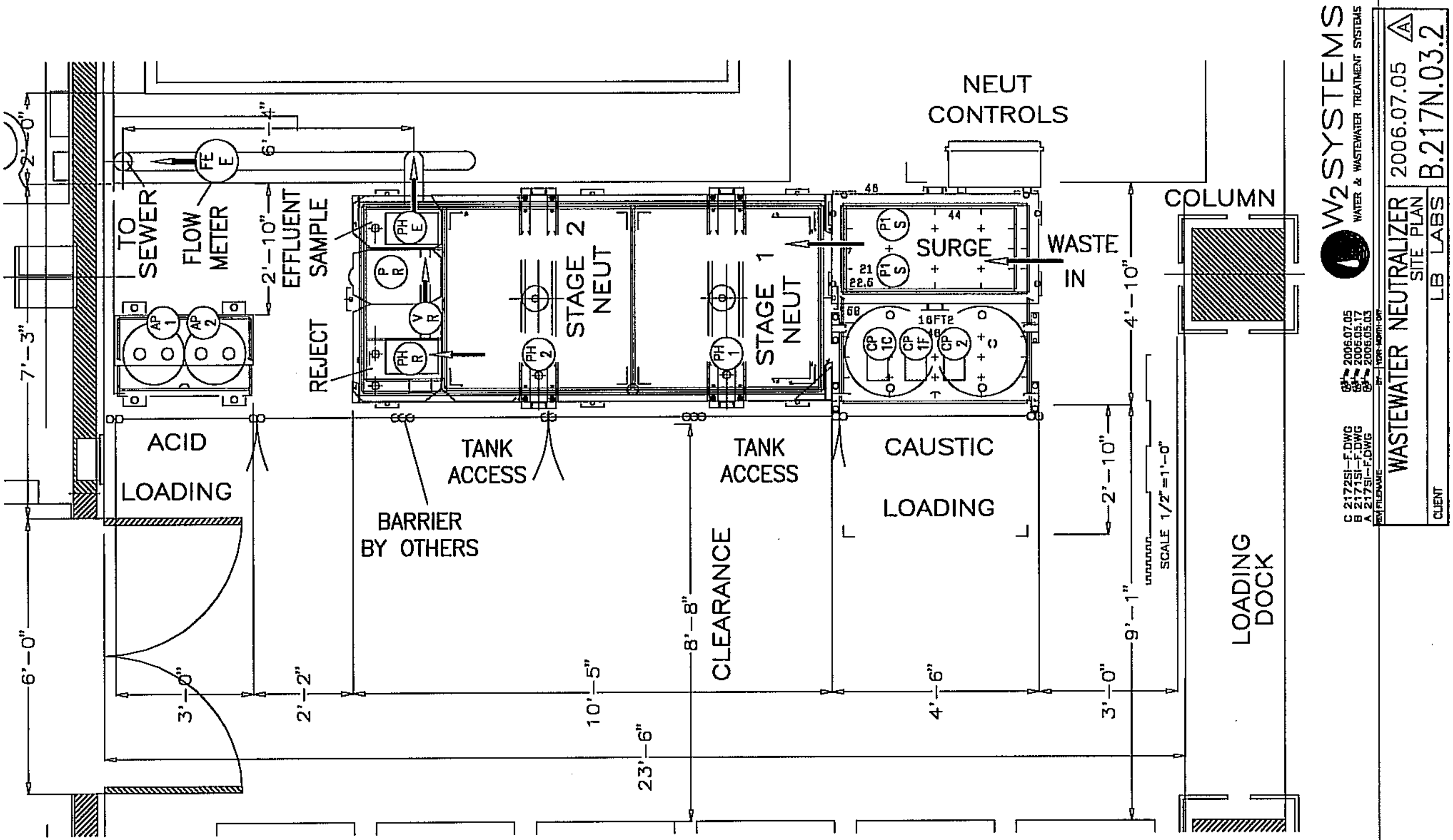
   - 126.8 L of 2M HCl → 253.6 moles HCl
   - 63.2 L of 1.02M KOH → 64.5 moles KOH
     - Heat of neutralization is limited by 64.5 moles of KOH; 189.1 moles of HCl remain unneutralized
     - Followed by 3.0 gal (11.4 L) clean water flush/discharge = 34.1 L
   - 64.5 moles x -58.1 kJ/moles x 1 kcal/4.184 kJ = 896 kcal liberated
   - Resultant mixture temperature without consideration of reaction heat is
     - [(126.8 x 295°K) + (63.2 x 295 °K) + (34.1 x 286°K)]/224.1 = 294°K = 68.9°F
   - Reaction heat results in a temperature rise of
     - 896 kcal x 1°C-L/kcal x 1.8 °F/°C x 1/224.1 L = 7.2°F

This scenario would result in a net concentration of unneutralized HCl acid of 0.84 moles/L at a temperature of approximately (68.9+7.2)=76.1°F. Per the IPLEX Chemical Resistance Guide, polypropylene shows high resistance at 140°F to 37% (12M) hydrochloric acid.

Reference:	John Seabury P.E. CIH, "Preliminary Process Description, Collection and Treatment of Acidic and Alkaline Waste, Molecular Foundry Nanofabrication Facility V.1.6 August 23, 2005"

Lawrence Berkeley National Laboratory
One Cyclotron Road, BLDG 85B0198 |Berkeley, California 94720-8282 |Tel: 510.486.7327 |Fax: 510.486.6603

5217 SURGE AND NEUTRALIZER



Hazardous Waste Tank Certification – FTU-007
Nanofabrication Wastewater Treatment System
Lawrence Berkeley National Laboratory
Berkeley, California

Summary: The caustic wastewater treatment system for the Nanofabrication Laboratory waste (designated FTU-007) operated by Lawrence Berkeley National Laboratory (the Berkeley Lab) in Berkeley, California, meets the applicable tank standards for storage and elementary neutralization of hazardous wastes per Title 22 of the California Code of Regulations, sections 66265.190 et seq.

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations.

Steven J. Tighe, P.E.
Chemical Engineer No. CH5980
Senior Project Manager
ENSR Corporation

Date: 7/31/07

REGISTERED PROFESSIONAL ENGINEER
STEVEN J. TIGHE
CH 5980
EXP. 9/30/08
CHEMICAL
STATE OF CALIFORNIA

Certification Valid Through: July 31, 2012

Lawrence Berkeley National Laboratory
Prior Enforcement History

Docket #: HWCA20040523
Effective date of Consent Order: 3/13/07
Agency: State of California
Environmental Protection Agency
Department of Toxic Substances Control
700 Heinz Ave.
Berkeley, CA 94710

Summary:

On March 13, 2007, Lawrence Berkeley National Laboratory (Berkeley Lab) received an administrative penalty of $28,000 from the State of California's Department of Toxic Substances Control for hazardous waste violations that resulted from inspections on April 22, 2003, March 16, 2004, and June 5, 2005. Specifically, the Berkeley Lab was fined for transporting hazardous materials to an offsite warehouse, which is not authorized to accept hazardous waste. The Berkeley Lab was also fined for holding hazardous waste in a Satellite Accumulation Area for more than one year and for receiving waste at the Berkeley Lab Hazardous Waste Handling Facility from an offsite location.

STATE OF CALIFORNIA
ENVIRONMENTAL PROTECTION AGENCY
DEPARTMENT OF TOXIC SUBSTANCES CONTROL

In the Matter of: The University of California - Lawrence Berkeley National Laboratory 1 Cyclotron Road Berkeley, California 94720 Respondent.	Docket HWCA 20040523 CONSENT ORDER Health and Safety Code Section 25187

1. INTRODUCTION

1.1. Parties. The California Department of Toxic Substances Control (Department) and The University of California - Lawrence Berkeley National Laboratory (Respondent) enter into this Consent Order (Order) and agree as follows:

1.2. Site. Respondent generates, handles, treats, stores, and/or disposes of hazardous waste at the following site: 1 Cyclotron Road, Berkeley, California 94720 (Site).[1]

1.3. Inspection. The Department inspected the Site on April 26, 2003, March 16, 2004, and June 29, 2005.

1.4. Authorization Status. The Department authorized Respondent to manage hazardous waste by a Hazardous Waste Facility Permit (HWFP) issued in May, 1993. Respondent timely filed its application for renewal. As required by regulation, the

[1] Respondent also operates at 2700 7th Street, Berkeley, California 94710 (LBNL-7th). The Respondent does not have a permit, certificate, registration, or interim status document to handle, treat, store and/or dispose of hazardous waste at LBNL-7th. Respondent's activities at LBNL-7th are limited to that of a hazardous waste generator.

Lawrence Berkeley National Laboratory

Permit by Rule Annual Report

for

Building 77 FTU 006
and
Building 25 FTU 002

Calendar Year 2007

Prepared by

Robert Fox
2/26/08

Introduction:

On June 28, 2005, the City of Berkeley requested that the Lawrence Berkeley National Laboratory (Berkeley Lab) supply a report for its two Permit by Rule fixed treatment units every March 1st. This was the first request that the Berkeley Lab has received from the City of Berkeley to supply a Permit by Rule report as described in California Code of Regulations, Title 22, Section 67450.3(c)(10). According to this section of Code, this report is only required when specifically requested by the CUPA.

Below is the reporting information for two Permit by Rule Fixed Treatment Units (FTU) for FTUs located at Building 77 and Building 25

22 CCR 67450.3(c)(10)(A):	Building 77, FTU 006 and Building 25, FTU 002
22 CCR 67450.3(c)(10)(B):	Lawrence Berkeley National Laboratory One Cyclotron Road, Mail Stop 85B0198 Berkeley, CA 94720 Attention: Mr. Robert Fox
22 CCR 67450.3(c)(10)(C):	Building 77, FTU 006 Contact: Ed Tully, Ultra High Vacuum Cleaning Facility Supervisor, (510) 486-5907 Building 25, FTU 002 Contact: Ed Tully, Ultra High Vacuum Cleaning Facility Supervisor, (510) 486-5907
22 CCR 67450.3(c)(10)(D):	Lawrence Berkeley National Laboratory One Cyclotron Road Berkeley, CA 94720
22 CCR 67450.3(c)(10)(E):	US EPA ID Number: CA 4890008986
22 CCR 67450.3(c)(10)(F):	Building 77, FTU 006 Operated 101 days in calendar year 2007. Building 25, FTU 002 Operated 11 days in calendar year 2007.
22 CCR 67450.3(c)(10)(G):	Building 77, FTU 006 31,537 gallons of aqueous acidic waste containing metals and aqueous alkaline waste were treated in calendar year 2007. Building 25, FTU 002 5,930 gallons of aqueous acidic waste containing metals were treated in calendar year 2007.

22 CCR 67450.3(c)(10)(H):	Building 77, FTU 006 Aqueous waste and sludge containing metals listed in 22CCR 66261.24(a)(2), hazardous due to metals content and pH. Building 25, FTU 002 Aqueous waste and sludge containing metals listed in 22CCR 66261.24(a)(2), hazardous due to metals content and pH.
22 CCR 67450.3(c)(10)(I):	Building 77, FTU 006 The treatment methods used include: metals precipitation, pH adjustment, sludge dewatering, and sludge drying. Building 25, FTU 002 The treatment methods used include: metals precipitation, pH adjustment, and sludge dewatering.
22 CCR 67450.3(c)(10)(J):	Building 77, FTU 006 31,537 gallons of aqueous acidic waste containing metals and aqueous alkaline waste were treated in calendar year 2007. Building 25, FTU 002 5,930 gallons of aqueous acidic waste containing metals were treated in calendar year 2007.
22 CCR 67450.3(c)(10)(K):	Building 77, FTU 006 No dried sludge containing metals was sent for disposal in calendar year 2007. Building 25, FTU 002 22.68 kilograms of dewatered sludge containing metals was sent for disposal in calendar year 2007. (Reference: Container C140554, HWHF receipt date: 7/24/07 22.68 kilograms of filter bags and tubes with traces of sludge containing metals were sent for disposal in calendar year 2007. (Reference: Container C138857, HWHF receipt date: 5/8/07)

UNIVERSAL WASTE GENERATOR REPORTING FORM

(Please see *Universal Waste Reporting Requirements* sheet for explanation and abbreviations.)

Facility Name and Address: E.O. Lawrence Berkeley National Laboratory

One Cyclotron Road, Berkeley CA 94720

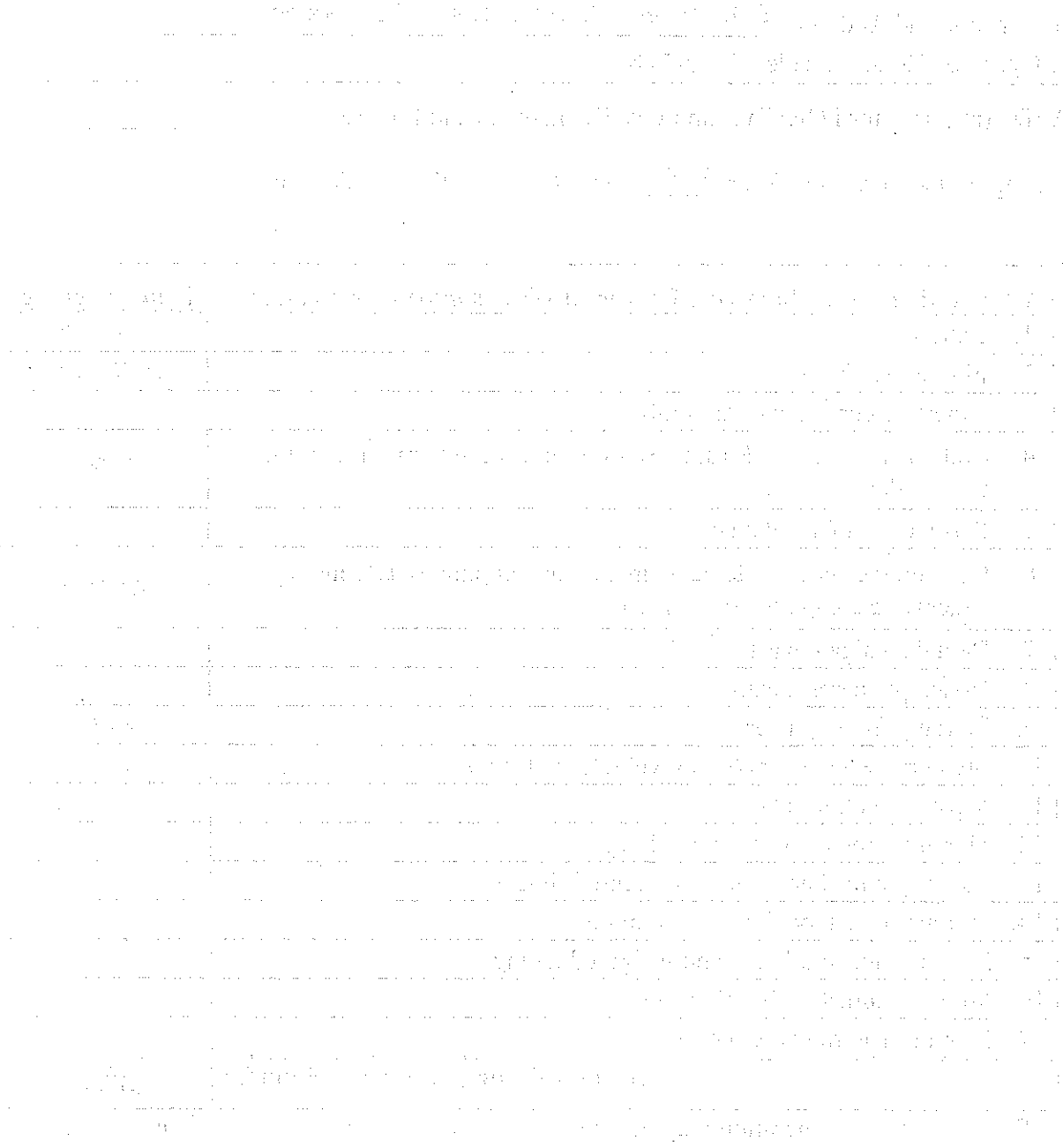
EPA ID# (required for LQHUWs, and UW Dismantlers and Processors): _____

Reporting Period: Calendar Year 2007 ; January 1 through December 31

All quantities of the following Universal Wastes must be reported:	**Pounds per Year**
1. Batteries	4315.1 lbs
2. Fluorescent bulbs*	95,500 linear ft
3. Other mercury containing bulbs	
4. Cathode ray tubes (CRTs, televisions and computer monitors that are not flat screened)	2,236 lbs
5. Plasma and LCD televisions	
6. Consumer electronic devices (including cell phones, telephones, pagers and computer equipment)	31,737 lbs
7. Dental amalgam wastes	
8. Nonempty aerosol cans	
9. Mercury thermometers	68.2 lbs
10. Mercury switches (including vehicle switches)	16.3 lbs
11. Mercury thermostats	
12. Mercury pressure or vacuum gauges	
13. Mercury-added novelties (i.e. lighted shoes)	
14. Mercury counterweights and dampers	
15. Mercury-added dilators and weighted tubing	
16. Mercury-added rubber flooring	
17. Mercury gas-flow regulators	
Annual Throughput-Total Pounds:	38,372.6 lbs

* Fluorescent bulb generation may be reported in feet, but please indicate the units used.

Please note that this information is for both LBNL and for its satellite location at 717 Potter Street.



The following items are elements of a comprehensive emergency response/contingency plan that meets state requirements. If your facility has a written plan, or if you are to prepare one, make sure all the elements listed are covered by your plan. Small facilities with simple operations may complete the boxes below to be in compliance with the written emergency plan requirement. Please submit a copy of your written response plan or complete and submit this form.

I. Facility Information

Facility Name: E.O. Lawrence Berkeley National Laboratory	Phone: (510) 486-5514
Address: One Cyclotron Road	
City: Berkeley	Zip: 94720

II. Emergency Coordinators

Primary Coordinator	Secondary Coordinator
Name: Emergency Contact Team	Name: Rocky Saunders
Title: LBNL 24/7 Emergency Contact Team	Title: Emergency Services Manager
Work Phone: Non-emergency (510) 486-4050	Work Phone: (510) 486-7032
After hours Phone: Emergency (510) 486-6999	After hours Phone: (510) 812-1517 cell
Pager:	Pager:

III. Emergency Telephone Numbers and Arrangements

The emergency coordinator shall immediately notify the following whenever a release, fire, or explosion threatens human health or the environment:

Agency	Phone
Fire Department	911
State Office of Emergency Services (OES)	1-800-852-7550
City of Berkeley Toxics Management Division	(510) 981-7460 or 911
Hospital/Medical Center (if injuries)	Alta Bates Hospital (510) 204-1303
EBMUD Waste Water Treatment Facility (if to sewer)	(510) 287-1651
Hazardous Waste Contractor (if clean up needed)	Onyx (800) 325-2382
Bay Area Air Quality Management District	(800) 334-6367 or (415) 771-6000
Other agencies:	

Arrangements: (Please check one box)

- ☐ We have no formalized written agreements with any emergency response agency or contractor.
- ☑ We have formalized written agreements with LBNL participates in the State Mutual Aid Agreement
  Telephone: _____ for emergency response.

IV. Earthquake Response

Identify the areas and/or mechanical equipment or other systems that could require immediate inspection or isolation because of their vulnerability to earthquake related ground motion.

Areas/equipment identified to be inspected immediately after an earthquake:	Damage Assessment Teams under the auspices of the Lab's Emergency Operations Center prioritize areas for earthquake response. Areas or equipment generally vulnerable to earthquake-related ground motion include chemical storage areas/cabinets, gas cylinders and dewars, waste collection and storage areas, cold storage and water systems.

V. Emergency Equipment Inventory Table

EQUIPMENT CATEGORY	✓	Equipment (✓ if these are provided)	Location*	Description**
Personal Protective Equipment, Safety Equipment, First Aid Equipment	✓	Chemical Protective Boots		
	✓	Chemical Protective Gloves		
	✓	Safety Glasses/Goggles/Face shields		
	✓	Chemical Protective Clothing		
	✓	Hard Hats		
	✓	Chemical Monitoring Equipment (describe)		
	✓	First Aid Kits		
	✓	Eye Wash Stations		
	✓	Safety Showers		
	✓	Cartridge Respirators and Cartridges (describe)		
	✓	Self-Contained Breathing Apparatus (SCBA)		
		Other (describe)		
Fire Extinguishing Systems	✓	Fire Extinguishers		The Lab's Fire Dept maintains haz mat response
	✓	Automatic Fire Systems		equip set forth in Alameda County Haz Mat Plan.
	✓	Fire Alarm Boxes		All bldgs have extinguishers, detectors, sprinklers.
Spill Control Equipment, Decontamination Equipment	✓	Absorbents, Neutralizers (describe)		
	✓	Shovels/Brooms/Squeegees		Fire Dept and Waste Accumulation Areas
	✓	Overpack drum/Spill drum		(WAAs) maintain appropriate equipment.
	✓	Berms/Dikes (describe)		
	✓	Decontamination Equipment (describe)		
	✓	Gas cylinder leak repair kits (describe)		
		Other (describe)		
Communications and Alarm Systems	✓	Telephones		A site-wide communications system is
	✓	Intercoms/PA systems		maintained and connected to the Fire Dept
	✓	Portable 2 way radios		Dispatch. Radios are supplied to each
		UST leak detection monitors		member of the Building Emergency Teams
	✓	Chemical alarms (describe)		
Additional Equipment (Use additional pages if needed)	✓	Emergency Rescue Boxes containing various emergency response equipment.	26 locations throughout site	

* If appropriate, use the location code(s) from your Hazardous Materials Business Plan.

** Describe the equipment, such as type and quantity, and its capabilities. If applicable, specify any testing/maintenance procedures/intervals.

VI. Evacuation Information:

Evacuation Announcement	✓ Bell ✓ PA System Other Building Emergency Teams ✓ Horn ✓ Shouting
Evacuation Route	✓ Map Other Site and Building Evacuation Plans
Assembly Area	Location: Per each building plan
Re-entry Procedures	Guidelines set forth in Master Emergency Program Plan

VII. Emergency Procedures:

Emergency Coordinator Responsibilities:

1. Whenever there is an imminent or actual emergency situation such as a explosion, fire, or release, the emergency coordinator *(or his/her designee when the emergency coordinator is on call)* shall:
   a. Identify the character, exact source, amount, and aerial extent of any released hazardous materials.
   b. Assess possible hazards to human health or the environment that may result from the explosion, fire, or release. This assessment must consider both direct and indirect effects *(e.g. the effects of any toxic, irritating, or asphyxiating gases that are generated, the effects of any hazardous surface water run-off from water or chemical agents used to control fire, etc.)*.
   c. Activate internal facility alarms or communications systems, where applicable, to notify all facility personnel.
   d. Notify appropriate local authorities *(i.e., call 911)*.
   e. Notify the State Office of Emergency Services at 1-800-852-7550.
   f. Monitor for leaks, pressure build-up, gas generation, or ruptures in valves, pipes, or other equipment shut down in response to the incident.
   g. Take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous materials at the facility.

2. Before facility operations are resumed in areas of the facility affected by the incident, the emergency coordinator shall:
   a. Provide for proper storage and disposal of recovered waste, contaminated soil or surface water, or any other material that results from a explosion, fire, or release at the facility.
   b. Ensure that no material that is incompatible with the released material is transferred, stored, or disposed of in areas of the facility affected by the incident until cleanup procedures are completed.
   c. Ensure that all emergency equipment is cleaned, fit for its intended use, and available for use.
   d. Notify the Cal/EPA's Department of Toxic Substances Control and the City of Berkeley Toxics Management Division that the facility is in compliance with requirements 2-a and 2-b, above.

Special site specific procedures:

Emergency	Response Action
Hazardous Material & Hazardous Waste Spills/Releases:	Procedures included in the State of Calif Dept of Toxic Substances Control, Part B Permit, and Alameda County Haz Mat Plan
Fire	" " " "
Explosion	" " " "
Earthquake	" " " "
Other	

Employee Training Plan

1. Scope

This plan is designed to provide employees with training on hazardous materials and hazardous waste that will satisfy the requirements of the California Health and Safety Code Chapter 6.95 and Chapter 6.5.

Facility Name:	E.O. Lawrence Berkeley National Laboratory
Address:	One Cyclotron Road, Berkeley CA 94720
Main Activity:	Scientific Research
Building or Areas where hazardous materials/wastes are found:	See Appendix B

2. Responsibilities

The following persons are responsible for ensuring that this Training Plan is implemented:

Name/Title	Training Responsibility
Don Lucas	EH&S Division Deputy

3. Employees/New Employees

New employees are trained during orientation, before starting on a job? ☑ YES ☐ NO

New employees who handle hazardous waste are trained in hazardous waste management within six months of hire date? ☑ YES ☐ NO

4. New Assignments or Changes in Operations

In the event of new assignments or of changes in operation, affected employees are trained before the new assignment or the change in operation takes place. ☑ YES ☐ NO

5. Refresher Training

Refresher training will be provided as needed (how often). The method used will be: *(check all that apply)*

- ☑ Outside classes
- ☑ In-house classes provided by contractor
- ☑ Safety meetings
- ☑ In-house classes conducted by in-house trainers

6. Training Topics

The following table indicates the training topics covered for this facility, as indicated with a ☑. Other documentation on these training topics is maintained and are available to the inspector upon request.

All employees are trained to do the following procedures, as appropriate:	
☑	1. Initiate, activate, or recognize internal alarms and other emergency announcements.
☑	2. Notify internal or on-site emergency responders listed in the emergency response/contingency plan.
☑	3. Notify agencies listed in the emergency/contingency plan.
☑	4. Locate and review contents of written emergency response/contingency plan.
☑	5. Initiate, conduct, or follow evacuation procedures as described in the emergency response/contingency plan.
Hazardous materials/waste handlers are additionally trained in the following subjects:	
☑	1. Safe methods for handling and storage of hazardous materials and hazardous waste.
☑	2. Locations and proper use of personal protective equipment.
☑	3. Locations and proper use of fire and spill control equipment.
☑	4. Specific hazards of each chemical or waste to which they may be exposed, including the pathways of exposure (i.e. skin absorption, inhalation, ingestion).
☑	5. Follow emergency procedures for chemical/waste spills, earthquake, fire, and/or medical emergencies as described in the emergency response/contingency plan.
☑	6. Hazardous waste handlers/managers are also trained in all aspects of hazardous waste management specific to their job duties (e.g. accumulation time, storage period, labels, inspection of containers and storage areas, uniform hazardous waste manifests, etc.)

7. Emergency Response Team

This facility has a formally organized Emergency Response Team. ☑ YES ☐ NO

Emergency Response Team members are additionally trained for the following activities:	
☑	1. Personnel rescue procedures.
☑	2. Shutdown of operations.
☑	3. Liaison with emergency response agencies.
☑	4. Use, maintenance, and replacement of emergency response equipment.
☑	5. Emergency response drills are conducted, at least *(specify frequency)* [ ] times a year.
☑	6. Refresher training is provided, at least annually.

8. Recordkeeping

Employee training and other records are to be maintained at the facility. These include the following:

☑	1. Record of training for each employee (date and duration of training, subject matter covered, instructor, etc.).
☑	2. Training records of current and former employees. (For current employees, records are to be retained until closure of the facility. For former employees, training records are to be retained for at least 3 years after termination of employment.
☑	3. Description of introductory and continuing training programs for each employee classification.
☑	4. Current emergency response, contingency, and/or spill response plan (for underground or aboveground tanks).
☑	5. Description and documentation of emergency response drills.
☑	6. Record of reportable/recordable accidental releases of hazardous material/waste.
☑	7. Record of inspections of hazardous material/waste storage areas.
☑	8. Record of daily inspection of hazardous waste tanks.
☑	9. Inspection procedures for identified earthquake-sensitive areas and systems in the facility.

Note: The above list does not necessarily include every type of record required to be maintained by your facility.

Training records are maintained in the following location: Institutional computer database; contact Jack Salazar (486-6571) for more information.

717 POTTER STREET
BUILDING 977

BERKELEY LAB

February 29, 2008
DIR-08-019

Mr. Nabil Al-Hadithy
City of Berkeley
Toxics Management Division
2118 Milvia Street
Berkeley, CA 94704

Dear Mr. Al-Hadithy:

We are enclosing the Lawrence Berkeley National Laboratory's (LBNL's) "Hazardous Materials Business Plan" to cover activities in the leased space at 717 Potter Street (Building 977). LBNL occupies approximately 75% of the assigned space (~72,000 square feet) within Building 977 consisting of research laboratories and support space.

Please note the following with respect to the enclosed documents:

Berkeley Lab is a federal facility owned by the Department of Energy (DOE). In certain areas of environmental regulation, Congress has directed federal facilities to comply with state and local requirements and pay reasonable service charges. In the area of hazardous materials planning and reporting, however, while DOE facilities must comply with federal Emergency Planning and Community Right-to-Know Act (EPCRA) requirements pursuant to an Executive Order, no waiver of federal sovereign immunity from state and local regulation has occurred. Despite the lack of a sovereign immunity waiver, LBNL voluntarily complies with state requirements for hazardous materials planning and reporting. The attached report provides the information required by the state regulations.

(1) Hazardous materials are reported if they meet or exceed state thresholds, aggregated by building.

(2) Radioactive materials reporting is consistent with state requirements. State requirements provide for reporting of radioactive materials that are handled in quantities for which an emergency plan would be required according to the Nuclear Regulatory Commission (NRC) or the State of California, Department of Heath Services (DHS) regulations. There are no radioactive materials at LBNL for which such an emergency plan would be required. All radioactive materials, including those in mixed waste, have been considered for this reporting category.

(3) Hazardous waste reporting also is consistent with state requirements.

We trust that this information will assist your office in serving the needs of the community regarding hazardous material disclosure information.

Please feel free to contact Jack Salazar (510) 486-6571 directly should you have any questions or wish to discuss this matter further.

Sincerely,

Howard K. Hatayama
Division Director
Environment, Health and Safety Division

HKH/JJS/jjw

Enclosures

cc: Kim Abbot, U.S. Department of Energy, Berkeley Site Office
Dan Lunsford, Berkeley Lab Emergency Management
Ron Pauer, Berkeley Lab Environmental Services Group Leader
Paul Blodgett, Berkeley Lab Health & Safety Deputy
Nancy Rothermich, Berkeley Lab Waste Management Group Leader
Greg Seaman, Building Manager 717 Potter Street

City of Berkeley, Toxics Management Division
2118 Milvia Street, Suite 300
Berkeley, CA 94704
(510) 981-7460 FAX (510) 981-7470

Hazardous Materials Business Plan (HMBP) Certification Statement

For Dept Use Only – Log In/Date Stamp

I. IDENTIFICATION

FACILITY ID # 1

BUSINESS NAME (Same as Facility Name or DBA-Doing Business As) 3
E.O. Lawrence Berkeley National Laboratory Building 977-Berkeley West Biocenter

BUSINESS SITE ADDRESS 717 Potter Street 103

CITY Berkeley 104 | CA | ZIP CODE 94710 - 2722 105

II. CERTIFICATION STATEMENT

Check the appropriate boxes below and sign the certification statement.

☐ INITIAL SUBMITTAL: This new HMBP is being submitted for the following:
- ☐ New facility
- ☐ Change of ownership
- ☐ Change of business address

☐ ANNUAL CERTIFICATION: I have personally reviewed the HMBP currently on file with your agency, dated _____, and hereby certify, *under penalty of perjury*, that:
- The information contained in the most recent HMBP submission is complete, accurate and up to date.
- A copy of the facility's most current Business Owner/Operator Identification page is being submitted with this certification form.
- The facility has not begun handling any hazardous materials/hazardous wastes that are not currently listed on the most recently submitted Hazardous Materials Inventory forms.
- There have been no significant changes (100% increase or decrease) in the quantities of any previously reported hazardous materials/hazardous wastes as reported on the most recently submitted Hazardous Materials Inventory forms.
- The facility's annual waste amounts reported on the most recently submitted Hazardous Materials Inventory forms are accurate and expected to be the same in the next year.
- This certification is <u>not</u> being made to meet annual inventory submission requirements of EPCRA. (EPCRA requires complete annual submission of the inventory, United States Code Title 42, Section 11022).

☑ CERTIFICATION OF CHANGES/REVISIONS: This is to certify that the HMBP has been reviewed and revisions, amendments and/or additions are necessary and are being submitted with this document. The following areas of the HBMP are affected:

- ☐ Entire HMBP revision
- ☐ Business Activities page
- ☐ Business Owner/Operator Identification page
- ☑ Hazardous Materials Inventory
- ☐ Facility Site Plan/Storage Map(s)
- ☐ Emergency Response Plan/Contingency Plan
- ☐ Other (Specify): _____

I hereby certify, under penalty of perjury, that the information contained in this Hazardous Materials Business Plan is, to the best of my knowledge, true and correct. I understand that I will be required to show proof of compliance during any facility inspection conducted by City, County, State, or Federal authorities. I understand that whenever there are changes in address, ownership, business name, or operations (closure, addition of undisclosed hazardous materials or hazardous wastes, and/or contingency planning provisions), a notification of such must be made to the Toxics Management Division within 30 days of the change.

SIGNATURE OF OWNER/OPERATOR OR DESIGNATED REPRESENTATIVE	DATE
	February 29, 2008
NAME OF SIGNER (print)	TITLE OF SIGNER
Howard Hatayama	Director, EH&S Division

Agency Use Only

- ☐ HMBP accepted as submitted
- ☐ HMBP requires revisions – Letter sent

HMBP ACCEPTED: ___/___/___ BY: _____

lanning and Development Department
Toxics Management Division

SPECIAL HAZARDS REGISTRATION

According to BMC Title 15, the following special hazards require registration and compliance with the ordinance. For copies of the compliance requirements, please contact your inspector for a copy of the ordinance.

Facility Name:	E.O. Lawrence Berkeley National Laboratory – Offsite Bldg. 977	
Facility Address:	717 Potter Street, Berkeley, CA 94710	Phone: 510-486-5099

I. Etiological Agents Disclosure:

Etiological agents can be microorganisms which cause disease. The BMC defines an etiologic agent as any of the following:

1 An infectious substance, which is any viable microorganism, or its toxin, which causes or may cause disease in humans or animals, and includes those agents listed in 42 CFR Section 72.3 or the regulations of the Department of Health and Human Services, or any other agent that causes or may cause severe, disabling or fatal disease;

2 A diagnostic specimen, which is any human or animal material including, but not limited to, excreta, secreta, blood and its components, tissue and tissue fluids, being handled for purposes of diagnosis;

3 A biological product, which is any material prepared and manufactured in accordance with the provisions of 9 CFR parts 102, 103, or 104, or 21 CFR parts 312 or 600-680; and

4 A medical waste as defined in California Health and Safety Code Section 25023.2.

If your facility stores or handles an etiological agent on site, you must report the agent name, quantity and storage location to the Toxics Management Division.

Biological materials present at this building are either Risk Group 1 or Risk Group 2 materials and are handled at either Biosafety Level 1 (e.g., standard LBNL lab) or Biosafety Level 2 containment (e.g., lab with biosafety cabinet), respectively. Risk Group 1 materials are not associated with disease in healthy adult humans, while Risk Group 2 materials are associated with human disease that is rarely serious and for which interventions are often available. Common biological materials include Risk Group 1 microorganisms, established human cell cultures, attenuated (e.g., replication deficient) viral vectors, and very limited samples of human tissue. Some medical waste as defined by California Health and Safety Code 25023.2 is generated. One operation uses a limited quantity and number of Risk Group 2 human pathogens (e.g., bacteria). Diagnostic specimens, biological products, Risk Group 3 agents, Risk Group 4 agents, and select agents are not used.

II. Radioactive Materials:

Any quantity of Radioactive Materials must be reported on the Hazardous Materials Inventory-Chemical Description page of the Hazardous Materials Business Plan.

Radioactive materials reporting is consistent with state requirements. State requirements provide for reporting of radioactive materials that are handled in quantities for which an emergency plan would be required according to the Nuclear Regulatory Commission (NRC) or the State of California, Department of Health Services (DHS) regulations. There are no radioactive materials at LBNL for which such an emergency plan would be required. All radioactive materials, including those in mixed waste, have been considered for this reporting category

City of Berkeley, Toxics Management Division

UNIFIED PROGRAM CONSOLIDATED FORM – FACILITY INFORMATION

BUSINESS ACTIVITIES

I. FACILITY IDENTIFICATION

FACILITY ID # 1

EPA ID # (Hazardous Waste Only) CAR000161679

BUSINESS NAME (Same as Facility Name or DBA-Doing Business As) 3

E.O. Lawrence Berkeley National Laboratory - Berkeley West Biocenter

II. ACTIVITIES DECLARATION

NOTE: If you check YES to any part of this list, please submit the Business Owner/Operator Identification page (OES Form 2730).

Does your facility…		If Yes, please complete these pages of the UPCF….
A. HAZARDOUS MATERIALS Have on site (for any purpose) hazardous materials at or above 55 gallons for liquids, 500 pounds for solids, or 200 cubic feet for compressed gases (include liquids in ASTs and USTs); or the applicable Federal threshold quantity for an extremely hazardous substance specified in 40 CFR Part 355, Appendix A or B; or handle radiological materials in quantities for which an emergency plan is required pursuant to 10 CFR Parts 30, 40 or 70?	☑ YES ☐ NO 4	HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION (OES 2731)
B. UNDERGROUND STORAGE TANKS (USTs)		
1. Own or operate underground storage tanks?	☐ YES ☑ NO 5	UST FACILITY (Formerly SWRCB Form A) UST TANK (one page per tank) (Formerly Form B)
2. Intend to upgrade existing or install new USTs?	☐ YES ☑ NO 6	UST FACILITY UST TANK (one per tank) UST INSTALLATION - CERTIFICATE OF COMPLIANCE (one page per tank) (Formerly Form C)
3. Need to report closing a UST?	☐ YES ☑ NO 7	UST TANK (closure portion –one page per tank)
C. ABOVE GROUND PETROLEUM STORAGE TANKS (ASTs) Own or operate ASTs above these thresholds: ---any tank capacity is greater than 1,320 gallons, or ---the total capacity for the facility is greater than 1,320 gallons?	☐ YES ☑ NO 8	NO FORM REQUIRED TO CUPAs
D. HAZARDOUS WASTE		
1. Generate hazardous waste?	☑ YES ☐ NO 9	EPA ID NUMBER – provide at the top of this page
2. Recycle more than 100 kg/month of excluded or exempted recyclable materials (per HSC 25143.2)?	☐ YES ☑ NO 10	RECYCLABLE MATERIALS REPORT (one per recycler)
3. Treat hazardous waste on site?	☐ YES ☑ NO 11	ONSITE HAZARDOUS WASTE TREATMENT – FACILITY (Formerly DTSC Forms 1772) ONSITE HAZARDOUS WASTE TREATMENT – UNIT (one page per unit) (Formerly DTSC Forms 1772 A,B,C,D and L)
4. Treatment subject to financial assurance requirements (for Permit by Rule and Conditional Authorization)?	☐ YES ☑ NO 12	CERTIFICATION OF FINANCIAL ASSURANCE (Formerly DTSC Form 1232)
5. Consolidate hazardous waste generated at a remote site?	☐ YES ☑ NO 13	REMOTE WASTE / CONSOLIDATION SITE ANNUAL NOTIFICATION (Formerly DTSC Form 1196)
6. Need to report the closure/removal of a tank that was classified as hazardous waste and cleaned onsite?	☐ YES ☑ NO 14	HAZARDOUS WASTE TANK CLOSURE CERTIFICATION (Formerly DTSC Form 1249)
E. LOCAL REQUIREMENTS		
1. Use or store hazardous materials or hazardous wastes in combined (aggregate) quantities equal to or greater than 55 gallons for liquids, 500 pounds for solids or 200 cubic feet for compressed gases?	☑ YES ☐ NO 15	HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION (OES 2731) OR SPREADSHEET
2. Use or store any quantity of etiological agents, radioactive materials or perchlorate materials?	☑ YES ☐ NO 15	HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION (OES 2731) OR SPREADSHEET
3. Below E.1. thresholds above, but generate any quantity of hazardous waste?	☐ YES ☑ NO 15	HAZARDOUS WASTE GENERATOR REPORTING PACKET
4. Generate any quantity of Universal Waste (mercury containing devices, non-empty aerosols, electronic devices, fluorescent tubes, batteries, mercury amalgam, etc.)?	☑ YES ☐ NO 15	SEE THE UNIVERSAL WASTE REPORTING REQUIREMENTS PAGE FOR INSTRUCTIONS
5. Generate any quantity of photochemical waste on-site (x-ray and photo imaging processors)?	☐ YES ☑ NO 15	IF STORED ONSITE, HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION (OES 2731) OR SPREADSHEET

City of Berkeley, Toxics Management Division

UNIFIED PROGRAM CONSOLIDATED FORM -- FACILITY INFORMATION

BUSINESS OWNER/OPERATOR IDENTIFICATION

I. IDENTIFICATION

FACILITY ID# 1	BEGINNING DATE 100	ENDING DATE 101
	01/01/2006	12/31/2006

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As) 3	BUSINESS PHONE 102
E.O. Lawrence Berkeley National Laboratory - Building 977	510-486-5099

BUSINESS SITE ADDRESS 103
717 Potter Street

CITY 104		ZIP CODE 105
Berkeley	CA	94710-2722

DUN & BRADSTREET 106	SIC CODE (4 digit #) 107
62-693-4998	8731

COUNTY 108
Alameda

BUSINESS OPERATOR NAME 109	BUSINESS OPERATOR PHONE 110
University of California	(510) 486-5514

II. BUSINESS OWNER

OWNER NAME 111	OWNER PHONE 112
U.S. Dept. of Energy-Lawrence Berkeley National Laboratory Site Office	(510) 486-4353

OWNER MAILING ADDRESS 113
One Cyclotron Road, Mail Stop 90R1023

CITY 114	STATE 115	ZIP CODE 116
Berkeley	CA	94720

III. ENVIRONMENTAL CONTACT

CONTACT NAME 117	CONTACT PHONE 118
Ronald O. Pauer	(510) 486-7614

CONTACT MAILING ADDRESS 119
One Cyclotron Road, Mail Stop 85B0198

CITY 120	STATE 121	ZIP CODE 122
Berkeley	CA	94720

IV. EMERGENCY CONTACTS

-PRIMARY-	-SECONDARY-
NAME 123	NAME 128
Emergency Contact Team	Rocky Saunders
TITLE 124	TITLE 129
LBNL 24/7 Emergency Contact Team	Emergency Services Manager
BUSINESS PHONE 125	BUSINESS PHONE 130
Non-emergency (510) 486-4050	(510) 486-7032
24-HOUR PHONE 126	24-HOUR PHONE 131
Emergency (510) 486-6999	(510) 812-1517 cell
PAGER # 127	PAGER # 132
	N/A

ADDITIONAL LOCALLY COLLECTED INFORMATION:

* Landlord (Wareham Development) Security Officers also patrol site. Phone Numbers 510-734-4786 & 510-367-7800

*Wareham Development Contact: Chris Barlow at 415-457-4964

Certification: Based on my inquiry of those individuals responsible for obtaining the information, I certify under penalty of law that I have personally examined and am familiar with the information submitted and believe the information is true, accurate, and complete.

SIGNATURE OF OWNER/OPERATOR OR DESIGNATED REPRESENTATIVE	DATE 134	NAME OF DOCUMENT PREPARER 135
	2/29/2008	Jack J. Salazar
NAME OF SIGNER (print) 136	TITLE OF SIGNER 137	
Howard Hatayama	Director, EH&S Division	

Date: 2/29/2008

Non-Waste Hazardous Materials Inventory Statement

For use by Unidocs Member Agencies or where approved by your Local Jurisdiction

Business Name: E.O. Berkeley National Laboratory (LBNL) - Offsite Bldg. 977 (Same as Facility Name or DBA)

Type of Report on This Page: ☐ Add; ☐ Delete; ☒ Revise

Page 3 of 10 (One page per building or area)

Chemical Location: 1st & 2nd floor (Building/Storage Area)

EPCRA Confidential Location? ☒ Yes; ☐ No
Trade Secret Information? ☐ Yes; ☒ No

Facility ID # (Agency Use Only)

1. Haz. Class	2. Map and Grid or Location Code	3. Common Name	4. Hazardous Components (For mixtures only) Chemical Name	% Wt.	EHS	CAS No.	5. Type and Physical State	6. Quantities Max. Daily	Average Daily	Largest Cont.	7. Units	8. Storage Codes Storage Pressure	Storage Temp.	9. Hazard Categories
2.2	Labs 165, 211, 212, 216, 217, 229, 239, 240, 272, & 276	Liquid Nitrogen (cryogenic nitrogen) CAS No.: 7440-59-7 ☐ EHS			☐		☒ pure ☐ mixture ☐ solid ☒ liquid ☐ gas	1500 Curies: (If radioactive)	1200 Days On Site: 365	60.8 Storage Container:* L	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☐ ambient ☒ > amb. ☐ < amb.	☐ ambient ☐ > amb. ☒ < amb. ☐ cryogenic	☐ fire ☐ reactive ☒ pressure release ☐ acute health ☐ chronic health ☐ radioactive
2.2	Labs on 2nd floor including 210, 272, 276, 278, & 288C	nitrogen CAS No.: 7440-59-7 ☐ EHS			☐		☒ pure ☐ mixture ☐ solid ☐ liquid ☒ gas	4000 Curies: (If radioactive)	3450 Days On Site: 365	228 Storage Container:* L	☐ gallons ☐ pounds ☒ cu. feet ☐ tons	☐ ambient ☒ > amb. ☐ < amb.	☒ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☐ fire ☐ reactive ☒ pressure release ☐ acute health ☐ chronic health ☐ radioactive
2.2	Labs 165 & 170	Liquid Helium CAS No.: 7440-59-7 ☐ EHS			☐		☒ pure ☐ mixture ☐ solid ☐ liquid ☒ gas	100 Curies: (If radioactive)	55 Days On Site: 365	26.4 Storage Container:* L	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☐ ambient ☒ > amb. ☐ < amb.	☐ ambient ☐ > amb. ☒ < amb. ☐ cryogenic	☐ fire ☐ reactive ☒ pressure release ☐ acute health ☐ chronic health ☐ radioactive
2.2	Labs 272 & 276	helium CAS No.: 7440-59-7 ☐ EHS			☐		☐ pure ☐ mixture ☐ solid ☐ liquid ☒ gas	1,300 Curies: (If radioactive)	775 Days On Site: 365	218 Storage Container:* L	☐ gallons ☐ pounds ☒ cu. feet ☐ tons	☐ ambient ☒ > amb. ☐ < amb.	☒ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☐ fire ☐ reactive ☒ pressure release ☐ acute health ☐ chronic health ☐ radioactive
2.1 (Flammable Gas)	Lab 272	hydrogen CAS No.: 1333-74-0 ☐ EHS			☐		☒ pure ☐ mixture ☐ solid ☐ liquid ☒ gas	395 Curies: (If radioactive)	200 Days On Site: 365	200 Storage Container:* L	☐ gallons ☐ pounds ☒ cu. feet ☐ tons	☐ ambient ☒ > amb. ☐ < amb.	☒ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☒ fire ☐ reactive ☒ pressure release ☐ acute health ☐ chronic health ☐ radioactive
3.2 (with few 3.1)	2nd floor	Assorted, pure Flammable Liquids - AGGREGATE SUM CAS No.: See attached 12 page list ☐ EHS			☐		☒ pure ☐ mixture ☐ solid ☒ liquid ☐ gas	144 Curies: (If radioactive)	120 Days On Site: 365	1 Storage Container:* M & N	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb. ☐ < amb.	☐ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☒ fire ☐ reactive ☐ pressure release ☐ acute health ☐ chronic health ☐ radioactive

* Storage Type codes:

Code	Storage Type	Code	Storage Type	Code	Storage Type	Code	Storage Type	Code	Storage Type	Code	Storage Type
A	Aboveground Tank	D	Steel Drum	G	Carboy	J	Bag	M	Glass Bottle or Jug	P	Tank Wagon
B	Belowground Tank	E	Plastic/Non-metallic Drum	H	Silo	K	Box	N	Plastic Bottle or Jug	Q	Rail Car
C	Tank Inside Building	F	Can	I	Fiber Drum	L	Cylinder	O	Tote Bin	R	Other

If EPCRA, sign below: _____

Emergency Response Plan/Contingency Plan

The following items are elements of a comprehensive emergency response/contingency plan that meets state requirements. If your facility has a written plan, or if you are to prepare one, make sure all the elements listed are covered by your plan. Small facilities with simple operations may complete the boxes below to be in compliance with the written emergency plan requirement. Please submit a copy of your written response plan or complete and submit this form.

I. Facility Information

Facility Name: E.O. Lawrence Berkeley National Laboratory, Bldg 977 (offsite)	Phone: (510) 486-5099
Address: 717 Potter Street	
City: Berkeley	Zip: 94710-2722

II. Emergency Coordinators

Primary Coordinator	Secondary Coordinator
Name: Emergency Contact Team	Name: Rocky Saunders
Title: LBNL 24/7 Emergency Contact Team	Title: Emergency Services Manager
Work Phone: Non-emergency (510) 486-4050	Work Phone: (510) 486-7032
After hours Phone: Emergency (510) 486-6999	After hours Phone: (510) 812-1517 cell
Pager:	Pager:

III. Emergency Telephone Numbers and Arrangements

The emergency coordinator shall immediately notify the following whenever a release, fire, or explosion threatens human health or the environment:

Agency	Phone
Fire Department	911
State Office of Emergency Services (OES)	1-800-852-7550
City of Berkeley Toxics Management Division	(510) 981-7460 or 911
Hospital/Medical Center (if injuries)	Alta Bates Hospital (510) 204-1303
EBMUD Waste Water Treatment Facility (if to sewer)	(510) 287-1651
Hazardous Waste Contractor (if clean up needed)	Onyx (800) 325-2382
Bay Area Air Quality Management District	(800) 334-6367 or (415) 771-6000
Other agencies:	

Arrangements: (Please check one box)

- ☐ We have no formalized written agreements with any emergency response agency or contractor.
- ☑ We have formalized written agreements with LBNL participates in the State Mutual Aid Agreement
  Telephone: (510) 486-9911 for emergency response.

IV. Earthquake Response

Identify the areas and/or mechanical equipment or other systems that could require immediate inspection or isolation because of their vulnerability to earthquake related ground motion.

Areas/equipment identified to be inspected immediately after an earthquake:	Damage Assessment Teams under the auspices of the Lab's Emergency Operations Center prioritize areas for earthquake response. Areas or ~~equipment generally vulnerable to earthquake-related ground motion~~ include chemical storage areas/cabinets, gas cylinders and dewars, waste ~~collection and storage areas, cold storage and water systems.~~

V. Emergency Equipment Inventory Table

EQUIPMENT CATEGORY	✓	Equipment (✓ if these are provided)	Location*	Description**
Personal Protective Equipment, Safety Equipment, First Aid Equipment		Chemical Protective Boots	Labs	In some spill kits as appropriate for the area.
		Chemical Protective Gloves	All labs	Nitrile.
		Safety Glasses/Goggles/Face shields	All labs	ANSI rated with side shields.
		Chemical Protective Clothing	All labs	Lab coats. Some plastic and rubber aprons.
		Hard Hats	Bldg Mgr	More than 4.
		Chemical Monitoring Equipment (describe)	None on site	Industrial Hygiene services always available from LBNL.
		First Aid Kits	Outside labs	Plus portable trauma kits in break rooms (289L & 111) and mail rooms (152 & 225A).
		Eye Wash Stations	In labs	See evacuation maps for locations.
		Safety Showers	In labs	See evacuation maps for locations.
		Cartridge Respirators and Cartridges (describe)	None on site	Industrial Hygiene services always available from LBNL.
		Self-Contained Breathing Apparatus (SCBA)	None on site	Industrial Hygiene services always available from LBNL.
		Other (describe)		The Fire Dept at Bldg 48 maintains haz material response capability/ equipment.
Fire Extinguishing Systems		Fire Extinguishers	Main corriders	Located throughout the bldgs (see evacuation maps).
		Automatic Fire Systems	Throughout	Fire detectors and sprinklers throughout.
		Fire Alarm Boxes	At exit doors	Including main internal corridor exits.
Spill Control Equipment, Decontamination Equipment		Absorbents, Neutralizers (describe)	Labs	In spill kits.
		Shovels/Brooms/Squeegees	Labs	Brooms only.
		Overpack drum/Spill drum		Fire Dept & Waste Accumulation Areas (WAAs) maintain appropriate equipment.
		Berms/Dikes (describe)	Labs	In spill kits.
		Decontamination Equipment (describe)	Labs	Safety showers and eye washes
		Gas cylinder leak repair kits (describe)	Bldg Mgr	Teflon tape, wrenches, soap for testing
		Other (describe)		
Communications and Alarm Systems		Telephones	Throughout	A site-wide communications system is maintained and connected to Fire Dpet Dispatch.
		Intercoms/PA systems		
		Portable 2 way radios	Bldg Mgr	Security Guard also.
		UST leak detection monitors		
		Chemical alarms (describe)		
Additional Equipment (Use additional pages if needed)				

* If appropriate, use the location code(s) from your Hazardous Materials Business Plan.

** Describe the equipment, such as type and quantity, and its capabilities. If applicable, specify any testing/maintenance procedures/intervals.

VI. Evacuation Information:

Evacuation Announcement	___Bell ___PA System Other Building Emergency Teams ✓ Horn ✓ Shouting
Evacuation Route	✓ Map Other Site and Building Evacuation Plans
Assembly Area	Location: To north of building as designated on the attached map.
Re-entry Procedures	Only as authorized by the incident commander/fire department.

VII. Emergency Procedures:

Emergency Coordinator Responsibilities:

1. Whenever there is an imminent or actual emergency situation such as a explosion, fire, or release, the emergency coordinator *(or his/her designee when the emergency coordinator is on call)* shall:
   a. Identify the character, exact source, amount, and aerial extent of any released hazardous materials.
   b. Assess possible hazards to human health or the environment that may result from the explosion, fire, or release. This assessment must consider both direct and indirect effects *(e.g. the effects of any toxic, irritating, or asphyxiating gases that are generated, the effects of any hazardous surface water run-off from water or chemical agents used to control fire, etc.)*.
   c. Activate internal facility alarms or communications systems, where applicable, to notify all facility personnel.
   d. Notify appropriate local authorities *(i.e., call 911)*.
   e. Notify the State Office of Emergency Services at 1-800-852-7550.
   f. Monitor for leaks, pressure build-up, gas generation, or ruptures in valves, pipes, or other equipment shut down in response to the incident.
   g. Take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous materials at the facility.

2. Before facility operations are resumed in areas of the facility affected by the incident, the emergency coordinator shall:
   a. Provide for proper storage and disposal of recovered waste, contaminated soil or surface water, or any other material that results from a explosion, fire, or release at the facility.
   b. Ensure that no material that is incompatible with the released material is transferred, stored, or disposed of in areas of the facility affected by the incident until cleanup procedures are completed.
   c. Ensure that all emergency equipment is cleaned, fit for its intended use, and available for use.
   d. Notify the Cal/EPA's Department of Toxic Substances Control and the City of Berkeley Toxics Management Division that the facility is in compliance with requirements 2-a and 2-b, above.

Special site specific procedures:

Emergency	Response Action
Hazardous Material & Hazardous Waste Spills/Releases:	Procedures included in the State of Calif Dept of Toxic Substances Control and Alameda County Haz Mat Plan. Note, however, that no waste will be transported between 717 Potter St. and the main LBNL site. In the event of a spill, the Blackberry Gate Security (24 hrs at 486-5472) will be contact o initiate LBNL Emergency Contact Team (ECT) procedures for spill response backup and cleanup.
Fire	Call 9911
Explosion	Call 9911
Earthquake	Call 9911. If safe to do so, check chemical storage & waste areas, including gas cylinders.
Other	Call 9911

Employee Training Plan

1. Scope

This plan is designed to provide employees with training on hazardous materials and hazardous waste that will satisfy the requirements of the California Health and Safety Code Chapter 6.95 and Chapter 6.5.

Facility Name:	E.O. Lawrence Berkeley National Laboratory
Address:	717 Potter St, Berkeley CA 94710-2722
Main Activity:	Scientific Research
Building or Areas where hazardous materials/wastes are found:	See Appendix B
	See pages "Non-Waste Hazardous Materials Inventory Statement".

2. Responsibilities

The following persons are responsible for ensuring that this Training Plan is implemented:

Name/Title	Training Responsibility
Don Lucas	EH&S Division Deputy

3. Employees/New Employees

New employees are trained during orientation, before starting on a job? ☑ YES ☐ NO

New employees who handle hazardous waste are trained in hazardous waste management within six months of hire date? ☑ YES ☐ NO

4. New Assignments or Changes in Operations

In the event of new assignments or of changes in operation, affected employees are trained before the new assignment or the change in operation takes place. ☑ YES ☐ NO

5. Refresher Training

Refresher training will be provided as needed (how often). The method used will be: *(check all that apply)*

- ☑ Outside classes
- ☑ In-house classes provided by contractor
- ☑ Safety meetings
- ☑ In-house classes conducted by in-house trainers

6. Training Topics

The following table indicates the training topics covered for this facility, as indicated with a ☑. Other documentation on these training topics is maintained and are available to the inspector upon request.

All employees are trained to do the following procedures, as appropriate:	
☑	1. Initiate, activate, or recognize internal alarms and other emergency announcements.
☑	2. Notify internal or on-site emergency responders listed in the emergency response/contingency plan.
☑	3. Notify agencies listed in the emergency/contingency plan.
☑	4. Locate and review contents of written emergency response/contingency plan.
☑	5. Initiate, conduct, or follow evacuation procedures as described in the emergency response/contingency plan.
Hazardous materials/waste handlers are additionally trained in the following subjects:	
☑	1. Safe methods for handling and storage of hazardous materials and hazardous waste.
☑	2. Locations and proper use of personal protective equipment.
☑	3. Locations and proper use of fire and spill control equipment.
☑	4. Specific hazards of each chemical or waste to which they may be exposed, including the pathways of exposure (i.e. skin absorption, inhalation, ingestion).
☑	5. Follow emergency procedures for chemical/waste spills, earthquake, fire, and/or medical emergencies as described in the emergency response/contingency plan.
☑	6. Hazardous waste handlers/managers are also trained in all aspects of hazardous waste management specific to their job duties (e.g. accumulation time, storage period, labels, inspection of containers and storage areas, uniform hazardous waste manifests, etc.)

7. Emergency Response Team

This facility has a formally organized Emergency Response Team. ☑ YES ☐ NO

Emergency Response Team members are additionally trained for the following activities:	
☑	1. Personnel rescue procedures.
☑	2. Shutdown of operations.
☑	3. Liaison with emergency response agencies.
☑	4. Use, maintenance, and replacement of emergency response equipment.
☑	5. Emergency response drills are conducted, at least *(specify frequency)* [ ] times a year.
☑	6. Refresher training is provided, at least annually.

8. Recordkeeping

Employee training and other records are to be maintained at the facility. These include the following:

☑	1. Record of training for each employee (date and duration of training, subject matter covered, instructor, etc.).
☑	2. Training records of current and former employees. (For current employees, records are to be retained until closure of the facility. For former employees, training records are to be retained for at least 3 years after termination of employment.
☑	3. Description of introductory and continuing training programs for each employee classification.
☑	4. Current emergency response, contingency, and/or spill response plan (for underground or aboveground tanks).
☑	5. Description and documentation of emergency response drills.
☑	6. Record of reportable/recordable accidental releases of hazardous material/waste.
☑	7. Record of inspections of hazardous material/waste storage areas.
☑	8. Record of daily inspection of hazardous waste tanks.
☑	9. Inspection procedures for identified earthquake-sensitive areas and systems in the facility.

Note: The above list does not necessarily include every type of record required to be maintained by your facility.

Training records are maintained in the following location: Institutional computer database; contact Jack Salazar (486-6571) for more information.

PRODUCTION GENOME FACILITY
DOE JOINT GENOME INSTITUTE
2800 MITCHELL DRIVE
WALNUT CREEK, CA

JGI
DOE JOINT GENOME INSTITUTE
US DEPARTMENT OF ENERGY
OFFICE OF SCIENCE

2800 MITCHELL DRIVE / WALNUT CREEK / CA 94598
www.jgi.doe.gov

February 27, 2008

Contra Costa County
Health Services Department
Environment Health Division
4333 Pacheco Boulevard
Martinez, CA 94553

Subject: Hazardous Materials Business Plan

To Whom It May Concern:

We are enclosing our annual submittal of the Hazardous Materials Business Plan for the Production Genome Facility (PGF) located at 2800 Mitchell Drive, Walnut Creek, CA. This facility is a research laboratory dedicated to DNA sequencing and production. It is operated for the Department of Energy (DOE) by the University of California (Lawrence Berkeley National Laboratory, Berkeley, CA (Berkeley Lab)). The Berkeley Lab is responsible for environment, safety, and health of the facility.

In certain areas of environmental regulation, Congress has directed federal facilities such as Berkeley Lab to comply with state and local requirements and pay reasonable service charges. In the area of hazardous materials planning and reporting, however, while DOE must ensure that its facilities comply with the federal Emergency Planning and Community Right-to-Know Act (EPCRA) requirements pursuant to an Executive Order, no waiver of federal sovereign immunity from state and local regulation has occurred. LBNL voluntarily complies with state requirements for hazardous materials planning and reporting.

The attached report provides the information that meets the requirements of California Code of Regulations, Title 19. In summary, a review of the chemical inventory for the facility indicate that hazardous materials are in small quantities and substantially below thresholds with few exceptions. We store a maximum of 880 gallons of ethanol waste in a designated Waste Accumulation Area (WAA) outside of Building 100. In addition, we have an emergency generator with a 4000-gallon above ground storage tank containing diesel fuel that serves

Building 100 (located adjacent to Building 400). Also, within our facility there are 2,885 cubic feet of nitrogen gas (most of which is stored in the outside area at the northwest corner of Building 100). Finally, 118 gallons of ethanol are distributed to locations in Building 100, Building 310, and Building 400. All of the above amendments are detailed in the attached facility maps.

We trust that this information will assist your office in serving the needs of the community regarding hazardous material disclosure information.

Please feel free to contact our Safety Coordinator Stephen Franaszek directly at (925) 296-5807 should you have any questions or wish to discuss this matter further.

Sincerely,

James Bristow
Deputy Director
Production Genomics Facility

Enclosures

SITE #770310
PRODUCTION GENOMICS FACILITY
2800 MITCHELL DR BLDG 944
WALNUT CREEK

UNIFIED PROGRAM CONSOLIDATED FORM
FACILITY INFORMATION 2008
BUSINESS ACTIVITIES

I. FACILITY IDENTIFICATION

FACILITY ID # (Agency Use Only)	0	7		0	0	0		7	7	0	3	1	0	1	EPA ID # (Hazardous Waste Only) CAD041841933 2

BUSINESS NAME (Same as Facility Name of DBA-Doing Business As) 3
E.O. Lawrence Berkeley National Laboratory

BUSINESS SITE ADDRESS 103
2800 Mitchell Dr.

BUSINESS SITE CITY 104
Walnut Creek

CA

ZIP CODE 105
94598

II. ACTIVITIES DECLARATION

NOTE: If you check YES to any part of this list, please submit the Business Owner/Operator Identification page (OES Form 2730).

Does your facility...		If Yes, please complete these pages of the UPCF....
A. HAZARDOUS MATERIALS Have on site (for any purpose) at any one time, hazardous materials at or above 55 gallons for liquids, 500 pounds for solids, or 200 cubic feet for compressed gases (include liquids in ASTs and USTs); or the applicable Federal threshold quantity for an extremely hazardous substance specified in 40 CFR Part 355, Appendix A or B; or handle radiological materials in quantities for which an emergency plan is required pursuant to 10 CFR Parts 30, 40 or 70?	☒ YES ☐ NO 4	BUSINESS OWNER/OPERATOR IDENTIFICATION HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION
B. REGULATED SUBSTANCES Have Regulated Substances stored onsite in quantities greater than the threshold quantities established by the California Accidental Release prevention Program (CalARP)?	☐ YES ☒ NO 4a	Coordinate with your local agency responsible for CalARP.
C. UNDERGROUND STORAGE TANKS (USTs) Own or operate underground storage tanks?	☐ YES ☒ NO 5	UST FACILITY UST TANK (one page per tank)
D. ABOVE GROUND PETROLEUM STORAGE Store greater than 1,320 gallons of petroleum products (new or used) in aboveground tanks or containers.	☒ YES ☐ NO 8	NO FORM REQUIRED TO CUPAs May require SPCC plan.
E. HAZARDOUS WASTE Generate hazardous waste?	☒ YES ☐ NO 9	EPA ID NUMBER – provide at the top of this page
Recycle more than 100 kg/month of excluded or exempted recyclable materials (per HSC 25143.2)?	☐ YES ☒ NO 10	RECYCLABLE MATERIALS REPORT (one per recycler)
Treat hazardous waste on-site?	☐ YES ☒ NO 11	ON-SITE HAZARDOUS WASTE TREATMENT – FACILITY ON-SITE HAZARDOUS WASTE TREATMENT – UNIT (one page per unit)
Treatment subject to financial assurance requirements (for Permit by Rule and Conditional Authorization)?	☐ YES ☒ NO 12	CERTIFICATION OF FINANCIAL ASSURANCE
Consolidate hazardous waste generated at a remote site?	☐ YES ☒ NO 13	REMOTE WASTE / CONSOLIDATION SITE ANNUAL NOTIFICATION
Need to report the closure/removal of a tank that was classified as hazardous waste and cleaned on-site?	☐ YES ☒ NO 14	HAZARDOUS WASTE TANK CLOSURE CERTIFICATION
Generate in any single calendar month 1,000 kilograms (kg) (2,200 pounds) or more of federal RCRA hazardous waste, or generate in any single calendar month, or accumulate at any time, 1 kg (2.2 pounds) of RCRA acute hazardous waste; or generate or accumulate at any time more than 100 kg (220 pounds) of spill cleanup materials contaminated with RCRA acute hazardous waste.	☐ YES ☒ NO 14a	Obtain federal EPA ID Number, file Biennial Report (EPA Form 8700-13A/B), and satisfy requirements for RCRA Large Quantity Generator.
Household Hazardous Waste (HHW) Collection site?	☐ YES ☒ NO 14b	See CUPA for required forms.

F. LOCAL REQUIREMENTS 15

(You may also be required to provide additional information by your CUPA or local agency.)

CONTRA COSTA HEALTH SERVICES-HAZARDOUS MATERIALS PROGRAMS
FACILITY INFORMATION 2008

BUSINESS OWNER/OPERATOR IDENTIFICATION

SITE #770310
PRODUCTION GENOMICS FACILITY
2800 MITCHELL DR BLDG 944
WALNUT CREEK

I. IDENTIFICATION

FACILITY ID# 0 7 0 0 0 7 7 0 3 1 0 [1]	BEGINNING DATE [100] 01/01/08	ENDING DATE [101] 12/31/08	
BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As) [3] Production Genomics Facility		BUSINESS PHONE [102] (925) 296-5670	
BUSINESS SITE ADDRESS [103] 2800 Mitchell Dr.		BUSINESS FAX [102a]	
BUSINESS SITE CITY [104] Walnut Creek	CA	ZIP CODE [105] 94598	COUNTY [108] Contra Costa
DUN & BRADSTREET [106] 170143759		PRIMARY SIC [107] 8731	PRIMARY NAICS [107a]
BUSINESS MAILING ADDRESS [108a] 1 Cyclotron Road, Mail Stop 90R1023			
BUSINESS MAILING CITY [108b] Berkeley	STATE [108c] CA	ZIP CODE [108d] 94720	
BUSINESS OPERATOR NAME [109] University of California		BUSINESS OPERATOR PHONE [110] (510) 486-5514	

II. BUSINESS OWNER

OWNER NAME [111] U.S. Department of Energy – Lawrence Berkeley National Lab Site Office	OWNER PHONE [112] (510) 486-4353	
OWNER MAILING ADDRESS [113] 1 Cyclotron Road, Mail Stop 85B0198		
OWNER MAILING CITY [114] Berkeley	STATE [115] CA	ZIP CODE [116] 94720

III. ENVIRONMENTAL CONTACT

CONTACT NAME [117] Ronald O. Pauer	CONTACT PHONE [118] (510) 486-7614	
CONTACT MAILING ADDRESS [119] 1 Cyclotron Road, Mail Stop 85B0198	CONTACT EMAIL [119a]	
CONTACT MAILING CITY [120] Berkeley	STATE [121] CA	ZIP CODE [122] 94720

IV. EMERGENCY CONTACTS

-PRIMARY-	-SECONDARY-
NAME [123] Greg Stanley	NAME [128] Emergency Incident Contact
TITLE [124] Facility Manager	TITLE [129] Emergency Incident Contact
BUSINESS PHONE [125] (925) 296-5788	BUSINESS PHONE [130] (510) 486-6999
24-HOUR PHONE [126] (925) 997-4834	24-HOUR PHONE [131] (510) 486-6999
PAGER # [127]	PAGER # [132]

ADDITIONAL LOCALLY COLLECTED INFORMATION: [1] [3] [3]

Number of Employees: 240 **Total Pounds of Hazardous Materials: 6,849**
Invoice Contact Name: Ron Pauer **Date of Ownership: 10/99**
Invoice Contact Address: One Cyclotron Road, Mail Stop 85B0198
Invoice City: Berkeley **Invoice State: CA** **Invoice ZIP: 94720** **Invoice Telephone: (510) 486-6603**

Certification: Based on my inquiry of those individuals responsible for obtaining the information, I certify under penalty of law that I have personally examined and am familiar with the information submitted and believe the information is true, accurate, and complete.

SIGNATURE OF OWNER/OPERATOR OR DESIGNATED REPRESENTATIVE	DATE [134]	NAME OF DOCUMENT PREPARER [135]
	2/27/08	Cheryl Chu
NAME OF SIGNER (print) [136] JAMES D. BRISTOW	TITLE OF SIGNER [137]	

UPCF (10/05)

CONTRA COSTA HEALTH SERVICES – HAZARDOUS MATERIALS PROGRAMS
UNIFIED PROGRAM CONSOLIDATED FORM
BUSINESS PLAN 2008

HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION

(one page per material per building or area)

☐ADD ☐DELETE ☒REVISE 200 Page _1_ of _1_

I. FACILITY INFORMATION

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As) 3
Production Genomics Facility

CHEMICAL LOCATION 201
Building 100, 310, & 400

CHEMICAL LOCATION CONFIDENTIAL 202
EPCRA YES____ NO__x__

FACILITY ID # 0 7 [redacted] 0 0 0 [redacted] 7 7 0 3 1 0 1

MAP# (optional) 203

GRID# (optional) 204

II. CHEMICAL INFORMATION

CHEMICAL NAME 205

TRADE SECRET ☐ Yes ☒ No 206
If Subject to EPCRA, refer to instructions

COMMON NAME 207
Diesel Fuel

Regulated Substance? ☐ Yes ☒ No 208

CAS# 209
68334-30-5

*If Regulated Substance is "Yes", all amounts below must be in lbs.

FIRE CODE HAZARD CLASSES : include physical & health characteristics 210
Class III A Combustible Liquid, Irritant

HAZARDOUS MATERIAL TYPE (Check one item only) ☒ a. PURE ☐ b. MIXTURE ☐ c. WASTE 211

RADIOACTIVE ☐ Yes ☒ No 212

CURIES 213

PHYSICAL STATE (Check one item only) ☐ a. SOLID ☒ b. LIQUID ☐ c. GAS 214

LARGEST CONTAINER 4,000 215

FED HAZARD CATEGORIES (Check all that apply) ☒ a. FIRE ☐ b. REACTIVE ☐ c. PRESSURE RELEASE ☐ d. ACUTE HEALTH ☒ e. CHRONIC HEALTH 216

AVERAGE DAILY AMOUNT 217	MAXIMUM DAILY AMOUNT 218	ANNUAL WASTE AMOUNT 219	STATE WASTE CODE 220
3,800	4,000	N/A	N/A

UNITS* (Check one item only) ☒ a. GALLONS ☐ b. CUBIC FEET ☐ c. POUNDS 221
* If EHS, amount must be in pounds.

DAYS ON SITE: 222
365

STORAGE CONTAINER ☒ a. ABOVE GROUND TANK ☐ b. UNDERGROUND TANK ☐ c. TANK INSIDE BUILDING ☐ d. STEEL DRUM ☐ e. PLASTIC/NONMETALLIC DRUM ☐ f. CAN ☐ g. CARBOY ☐ h. SILO ☐ i. FIBER DRUM ☐ j. BAG ☐ k. BOX ☐ l. CYLINDER ☐ m. GLASS BOTTLE ☐ n. PLASTIC BOTTLE ☐ o. TOTE BIN ☐ p. TANK WAGON ☐ q. RAIL CAR ☐ r. OTHER 223

STORAGE PRESSURE ☒ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT 224

STORAGE TEMPERATURE ☒ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT ☐ d. CRYOGENIC 225

%WT	HAZARDOUS COMPONENT (For mixture or waste only)	Regulated Substance	CAS #
1 226	227	☐ Yes ☐ No 228	229
2 230	231	☐ Yes ☐ No 232	233
3 234	235	☐ Yes ☐ No 236	237
4 238	239	☐ Yes ☐ No 240	241
5 242	243	☐ Yes ☐ No 244	245

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

ADDITIONAL LOCALLY COLLECTED INFORMATION: 246

Maximum Daily Amount in pounds: 29,200 Lbs.

CONTRA COSTA HEALTH SERVICES – HAZARDOUS MATERIALS PROGRAMS
UNIFIED PROGRAM CONSOLIDATED FORM
BUSINESS PLAN 2008

HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION

(one page per material per building or area)

☐ADD ☐DELETE ☒REVISE 200 Page _1_ of _1_

I. FACILITY INFORMATION

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As) 3
Production Genomics Facility

CHEMICAL LOCATION 201
Building 100, 310, & 400

CHEMICAL LOCATION CONFIDENTIAL EPCRA YES____ NO__x__ 202

FACILITY ID # 0 7 [redacted] 0 0 0 [redacted] 7 7 0 3 1 0 1

MAP# (optional) 203

GRID# (optional) 204

II. CHEMICAL INFORMATION

CHEMICAL NAME 205
Ethyl Alcohol

TRADE SECRET ☐ Yes ☒ No 206
If Subject to EPCRA, refer to instructions

COMMON NAME 207
Ethanol

Regulated Substance? ☐ Yes ☒ No 208

CAS# 209
64-17-5

*If Regulated Substance is "Yes", all amounts below must be in lbs.

FIRE CODE HAZARD CLASSES : include physical & health characteristics 210
Class IA Flammable Liquid

HAZARDOUS MATERIAL TYPE (Check one item only) ☒ a. PURE ☐ b. MIXTURE ☐ c. WASTE 211

RADIOACTIVE ☐ Yes ☒ No 212

CURIES 213

PHYSICAL STATE (Check one item only) ☐ a. SOLID ☒ b. LIQUID ☐ c. GAS 214

LARGEST CONTAINER 1 215

FED HAZARD CATEGORIES (Check all that apply) 216
☒ a. FIRE ☐ b. REACTIVE ☐ c. PRESSURE RELEASE ☐ d. ACUTE HEALTH ☒ e. CHRONIC HEALTH

AVERAGE DAILY AMOUNT 217	MAXIMUM DAILY AMOUNT 218	ANNUAL WASTE AMOUNT 219	STATE WASTE CODE 220
63	118	N/A	N/A

UNITS* (Check one item only) ☒ a. GALLONS ☐ b. CUBIC FEET ☐ c. POUNDS 221
* If EHS, amount must be in pounds.

DAYS ON SITE: 222

STORAGE CONTAINER 223
☐ a. ABOVE GROUND TANK ☐ e. PLASTIC/NONMETALLIC DRUM ☐ i. FIBER DRUM ☐ m. GLASS BOTTLE ☐ q. RAIL CAR
☐ b. UNDERGROUND TANK ☐ f. CAN ☐ j. BAG ☒ n. PLASTIC BOTTLE ☐ r. OTHER
☐ c. TANK INSIDE BUILDING ☐ g. CARBOY ☐ k. BOX ☐ o. TOTE BIN
☐ d. STEEL DRUM ☐ h. SILO ☐ l. CYLINDER ☐ p. TANK WAGON

STORAGE PRESSURE ☒ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT 224

STORAGE TEMPERATURE ☒ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT ☐ d. CRYOGENIC 225

	%WT	HAZARDOUS COMPONENT (For mixture or waste only)	Regulated Substance	CAS #
1	226	227	☐ Yes ☐ No 228	229
2	230	231	☐ Yes ☐ No 232	233
3	234	235	☐ Yes ☐ No 236	237
4	238	239	☐ Yes ☐ No 240	241
5	242	243	☐ Yes ☐ No 244	245

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

ADDITIONAL LOCALLY COLLECTED INFORMATION: 246

Maximum Daily Amount in pounds: 778 Lbs.

CONTRA COSTA HEALTH SERVICES – HAZARDOUS MATERIALS PROGRAMS
UNIFIED PROGRAM CONSOLIDATED FORM
BUSINESS PLAN 2008

HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION

(one page per material per building or area)

☐ ADD ☐ DELETE ☒ REVISE 200 | Page _1_ of _1_

I. FACILITY INFORMATION

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As) 3
Production Genomics Facility

CHEMICAL LOCATION 201
Building 100, 310, & 400

CHEMICAL LOCATION CONFIDENTIAL 202
EPCRA YES____ NO__x__

FACILITY ID # 0 7 [redacted] 0 0 0 [redacted] 7 7 0 3 1 0 1

MAP# (optional) 203

GRID# (optional) 204

II. CHEMICAL INFORMATION

CHEMICAL NAME 205
Nitrogen

TRADE SECRET ☐ Yes ☒ No 206
If Subject to EPCRA, refer to instructions

COMMON NAME 207
Nitrogen

Regulated Substance? ☐ Yes ☒ No 208

CAS# 209
7727-37-9

*If Regulated Substance is "Yes", all amounts below must be in lbs.

FIRE CODE HAZARD CLASSES : include physical & health characteristics 210
Compressed Gas, Inert

HAZARDOUS MATERIAL TYPE (Check one item only) ☒ a. PURE ☐ b. MIXTURE ☐ c. WASTE 211

RADIOACTIVE ☐ Yes ☒ No 212

CURIES 213

PHYSICAL STATE (Check one item only) ☐ a. SOLID ☐ b. LIQUID ☒ c. GAS 214

LARGEST CONTAINER 250 215

FED HAZARD CATEGORIES (Check all that apply) 216
☐ a. FIRE ☐ b. REACTIVE ☒ c. PRESSURE RELEASE ☐ d. ACUTE HEALTH ☐ e. CHRONIC HEALTH

AVERAGE DAILY AMOUNT 217	MAXIMUM DAILY AMOUNT 218	ANNUAL WASTE AMOUNT 219	STATE WASTE CODE 220
1,750	2,885	N/A	N/A

UNITS* (Check one item only) 221
☐ a. GALLONS ☒ b. CUBIC FEET ☐ c. POUNDS
* If EHS, amount must be in pounds.

DAYS ON SITE: 222
365

STORAGE CONTAINER 223
☐ a. ABOVE GROUND TANK ☐ e. PLASTIC/NONMETALLIC DRUM ☐ i. FIBER DRUM ☐ m. GLASS BOTTLE ☐ q. RAIL CAR
☐ b. UNDERGROUND TANK ☐ f. CAN ☐ j. BAG ☐ n. PLASTIC BOTTLE ☐ r. OTHER
☐ c. TANK INSIDE BUILDING ☐ g. CARBOY ☐ k. BOX ☐ o. TOTE BIN
☐ d. STEEL DRUM ☐ h. SILO ☒ l. CYLINDER ☐ p. TANK WAGON

STORAGE PRESSURE 224
☐ a. AMBIENT ☒ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT

STORAGE TEMPERATURE 225
☒ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT ☐ d. CRYOGENIC

%WT	HAZARDOUS COMPONENT (For mixture or waste only)	Regulated Substance	CAS #
1 226	227	☐ Yes ☐ No 228	229
2 230	231	☐ Yes ☐ No 232	233
3 234	235	☐ Yes ☐ No 236	237
4 238	239	☐ Yes ☐ No 240	241
5 242	243	☐ Yes ☐ No 244	245

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

ADDITIONAL LOCALLY COLLECTED INFORMATION: 246

Maximum Daily Amount in pounds: 225 Lbs.

CONTRA COSTA HEALTH SERVICES – HAZARDOUS MATERIALS PROGRAMS
UNIFIED PROGRAM CONSOLIDATED FORM
BUSINESS PLAN 2008

HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION

(one page per material per building or area)

☐ ADD ☐ DELETE ☒ REVISE 200 Page _1_ of _1_

I. FACILITY INFORMATION

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As) 3
Production Genomics Facility

CHEMICAL LOCATION 201
Building 100, 310, & 400

CHEMICAL LOCATION CONFIDENTIAL 202
EPCRA YES____ NO__x__

FACILITY ID # 0 7 0 0 0 7 7 0 3 1 0 1

MAP# (optional) 203

GRID# (optional) 204

II. CHEMICAL INFORMATION

CHEMICAL NAME 205
Waste Ethyl Alcohol

TRADE SECRET ☐ Yes ☒ No 206
If Subject to EPCRA, refer to instructions

COMMON NAME 207
Waste Ethanol

Regulated Substance? ☐ Yes ☒ No 208

CAS# 209
mixture

*If Regulated Substance is "Yes", all amounts below must be in lbs.

FIRE CODE HAZARD CLASSES : include physical & health characteristics 210
Flammable

HAZARDOUS MATERIAL TYPE (Check one item only) ☐ a. PURE ☒ b. MIXTURE ☐ c. WASTE 211

RADIOACTIVE ☐ Yes ☒ No 212

CURIES 213

PHYSICAL STATE (Check one item only) ☐ a. SOLID ☒ b. LIQUID ☐ c. GAS 214

LARGEST CONTAINER 55 215

FED HAZARD CATEGORIES (Check all that apply) 216
☒ a. FIRE ☐ b. REACTIVE ☐ c. PRESSURE RELEASE ☐ d. ACUTE HEALTH ☒ e. CHRONIC HEALTH

AVERAGE DAILY AMOUNT 217	MAXIMUM DAILY AMOUNT 218	ANNUAL WASTE AMOUNT 219	STATE WASTE CODE 220
165	200	880	212

UNITS* (Check one item only) 221 ☒ a. GALLONS ☐ b. CUBIC FEET ☐ c. POUNDS
* If EHS, amount must be in pounds.

DAYS ON SITE: 222
365

STORAGE CONTAINER 223
☐ a. ABOVE GROUND TANK ☐ e. PLASTIC/NONMETALLIC DRUM ☐ i. FIBER DRUM ☐ m. GLASS BOTTLE ☐ q. RAIL CAR
☐ b. UNDERGROUND TANK ☐ f. CAN ☐ j. BAG ☐ n. PLASTIC BOTTLE ☐ r. OTHER
☐ c. TANK INSIDE BUILDING ☐ g. CARBOY ☐ k. BOX ☐ o. TOTE BIN
☒ d. STEEL DRUM ☐ h. SILO ☐ l. CYLINDER ☐ p. TANK WAGON

STORAGE PRESSURE 224 ☒ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT

STORAGE TEMPERATURE 225 ☒ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT ☐ d. CRYOGENIC

	%WT	HAZARDOUS COMPONENT (For mixture or waste only)	Regulated Substance	CAS #
1	50 226	Ethanol 227	☐ Yes ☒ No 228	64-17-5 229
2	15 230	Polyethylene Glycol 231	☐ Yes ☒ No 232	68130-99-4 233
3	15 234	Isopropanol 235	☐ Yes ☒ No 236	67-63-0 237
4	238	239	☐ Yes ☐ No 240	241
5	242	243	☐ Yes ☐ No 244	245

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

ADDITIONAL LOCALLY COLLECTED INFORMATION: 246

Maximum Daily Amount in pounds: 5,799 Lbs.

Hazardous Materials Inventory - Chemical Description

WILLIAM B. WALKER, M. D.
HEALTH SERVICES DIRECTOR
RANDALL L. SAWYER
DIRECTOR

CONTRA COSTA
HEALTH SERVICES

HAZARDOUS MATERIALS PROGRAMS
4333 Pacheco Boulevard
Martinez, California
94553-2229
Ph (925) 646-2286
Fax (925) 646-2073

2008 CUPA PACKET
HAZARDOUS WASTE GENERATOR REPORTING FORM

FACILITY/SITE ID: PRODUCTION GENOMICS FACILITY/770310
2800 MITCHELL DR. BLDG 944
WALNUT CREEK 94598

PLEASE READ THE INSTRUCTIONS ON THE BACK BEFORE COMPLETING THIS FORM. THE INSTRUCTIONS HAVE SIGNIFICANTLY CHANGED FROM PREVIOUS YEARS.

Please return this completed form along with your CUPA documents to the Hazardous Materials Programs Office by March 3, 2008. **Forms postmarked after March 3, 2008 will be assessed a 50% late filing fee.**

- Do not send payments at this time.
- Retain a copy for your records.

1. Determine how much hazardous waste your business generated during the **2007** calendar year.

Total tonnage of Hazardous Waste Generated: 3.43

2007 HAZARDOUS WASTE GENERATOR CATEGORIES

Quantity of Hazardous Waste Generated	Fee Category #
Less than 5 tons	1
5 or more tons, but less than 25 tons	2
25 or more tons, but less than 50 tons	3
50 or more tons, but less than 250 tons	4
250 or more tons, but less than 500 tons	5
500 or more tons, but less than 1,000 tons	6
1,000 or more tons, but less than 2,000 tons	7
2,000 or more tons	8
Used Oil Only – See instructions on reverse	10

1. Using the table above, determine the Fee Category for your business. Categories will be verified during inspections. Discrepancies may result in additional fees and penalties.

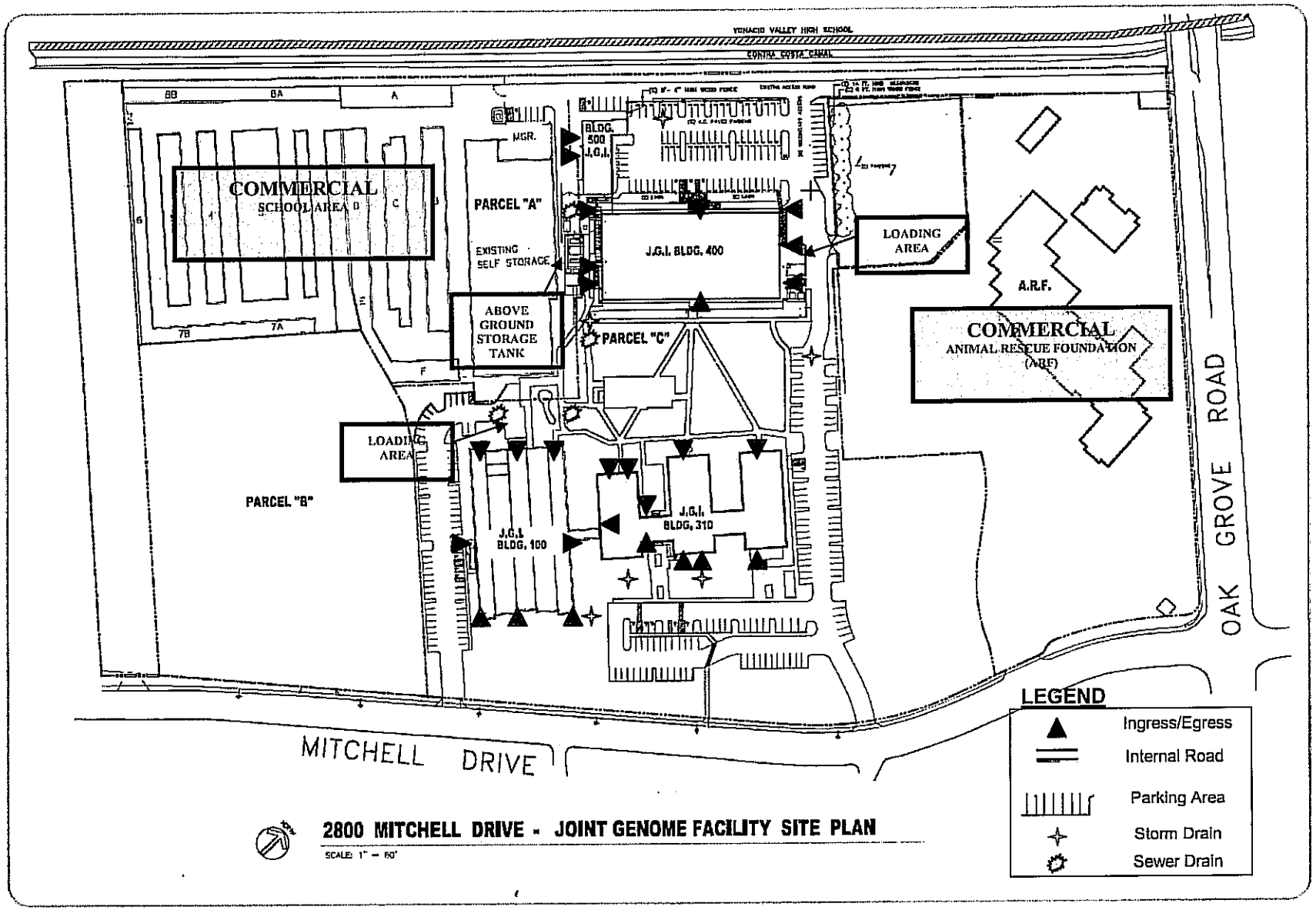
Category: 1

I hereby certify that this form, including any accompanying statements, is true and correct to the best of my knowledge and belief.

Signature: James D. Bristow	Date: 2/29/08
Print Name: James D. Bristow	
Title: Deputy Director, Joint Genome Institute (JGI)	Phone # (925) 296-5804

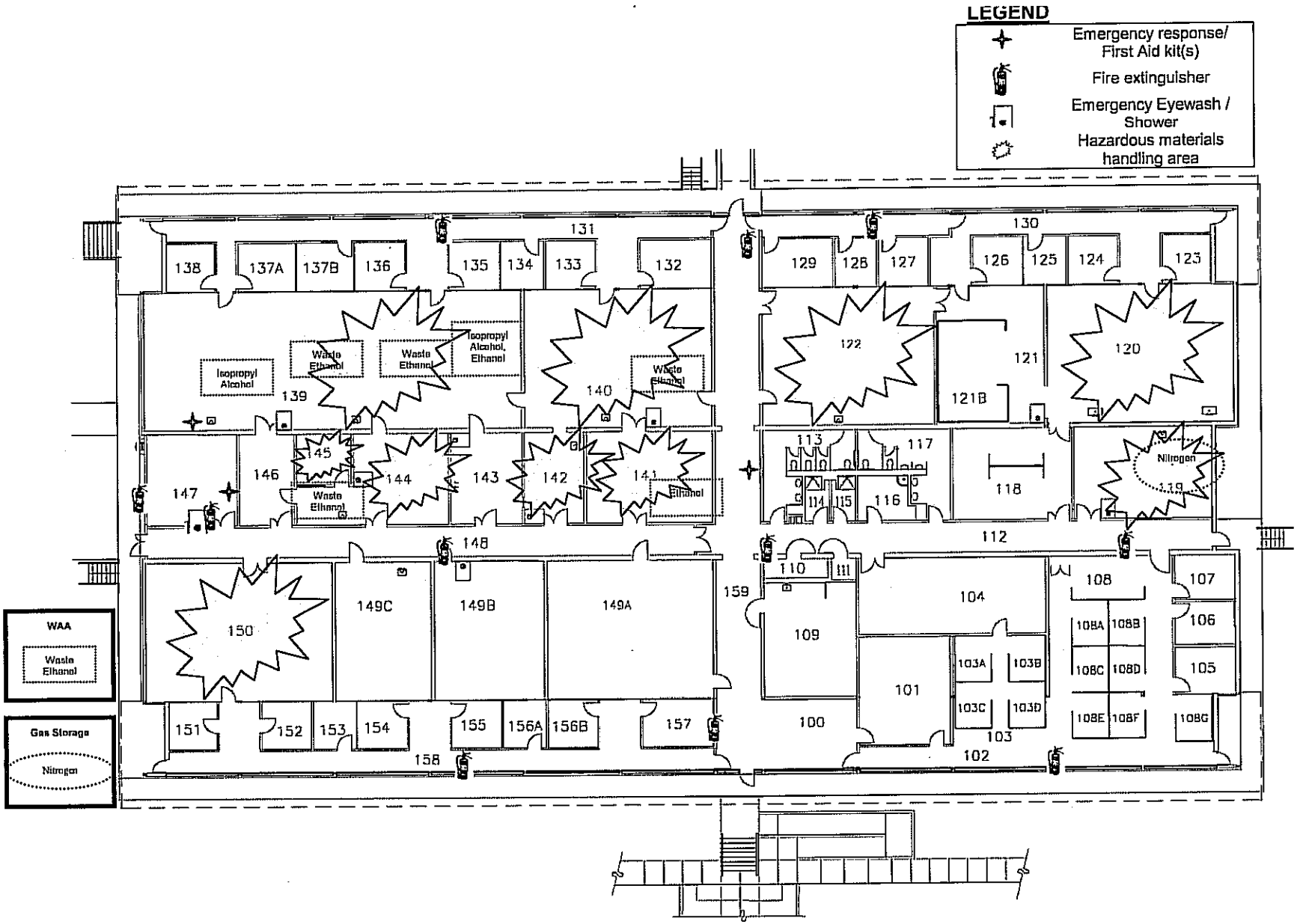
Forms postmarked after March 3, 2008 will be assessed a 50% late filing fee.

- Do not send payments at this time.
- Retain a copy for your records.

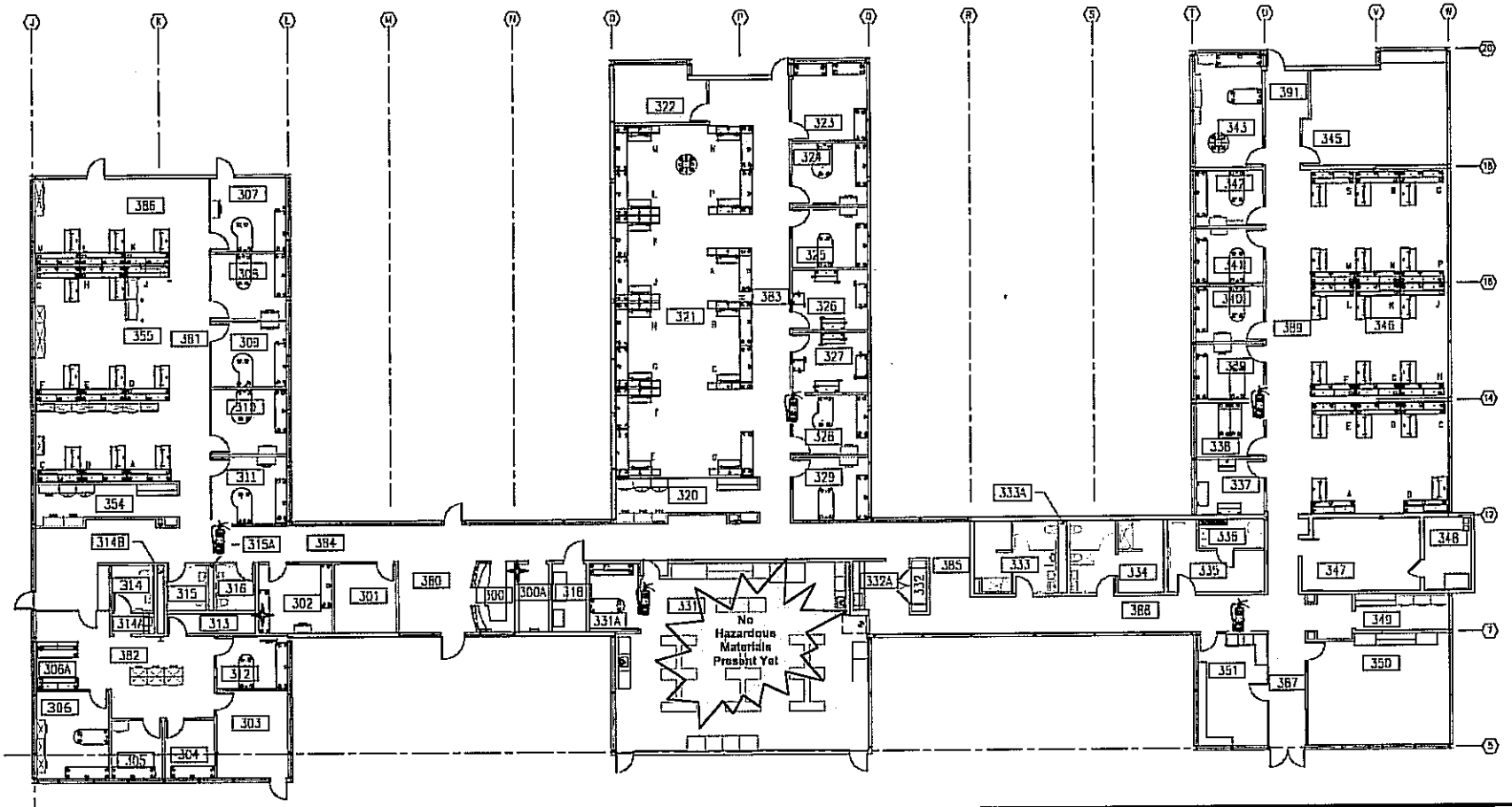


2800 MITCHELL DRIVE - JOINT GENOME FACILITY SITE PLAN

SCALE: 1" = 60'



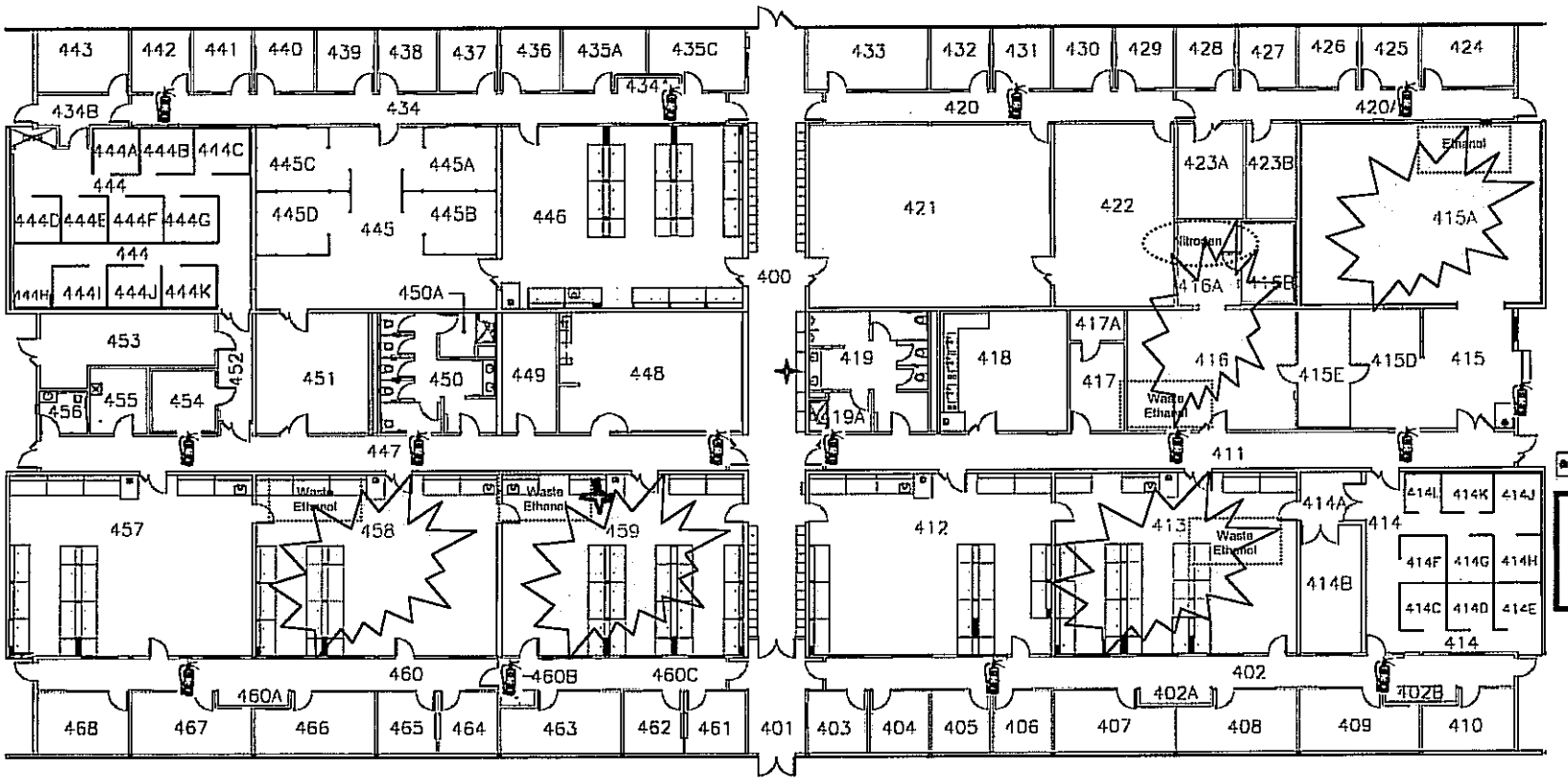
UNIVERSITY OF CALIFORNIA LAWRENCE BERKELEY NATIONAL LABORATORY **FACILITIES DIVISION**	0 5 10 20	ASBUILT CONDITION KEYPLAN	date: 4-7-2006 update: JSK	**100-1** 1 of 3



UNIVERSITY OF CALIFORNIA LAWRENCE BERKELEY NATIONAL LABORATORY **FACILITIES DIVISION**	0 10' 20' 40'	ASBUILT CONDITION KEYPLAN	date: 1/30/2008 update: RZT	**310-1** 1 of 1

LEGEND

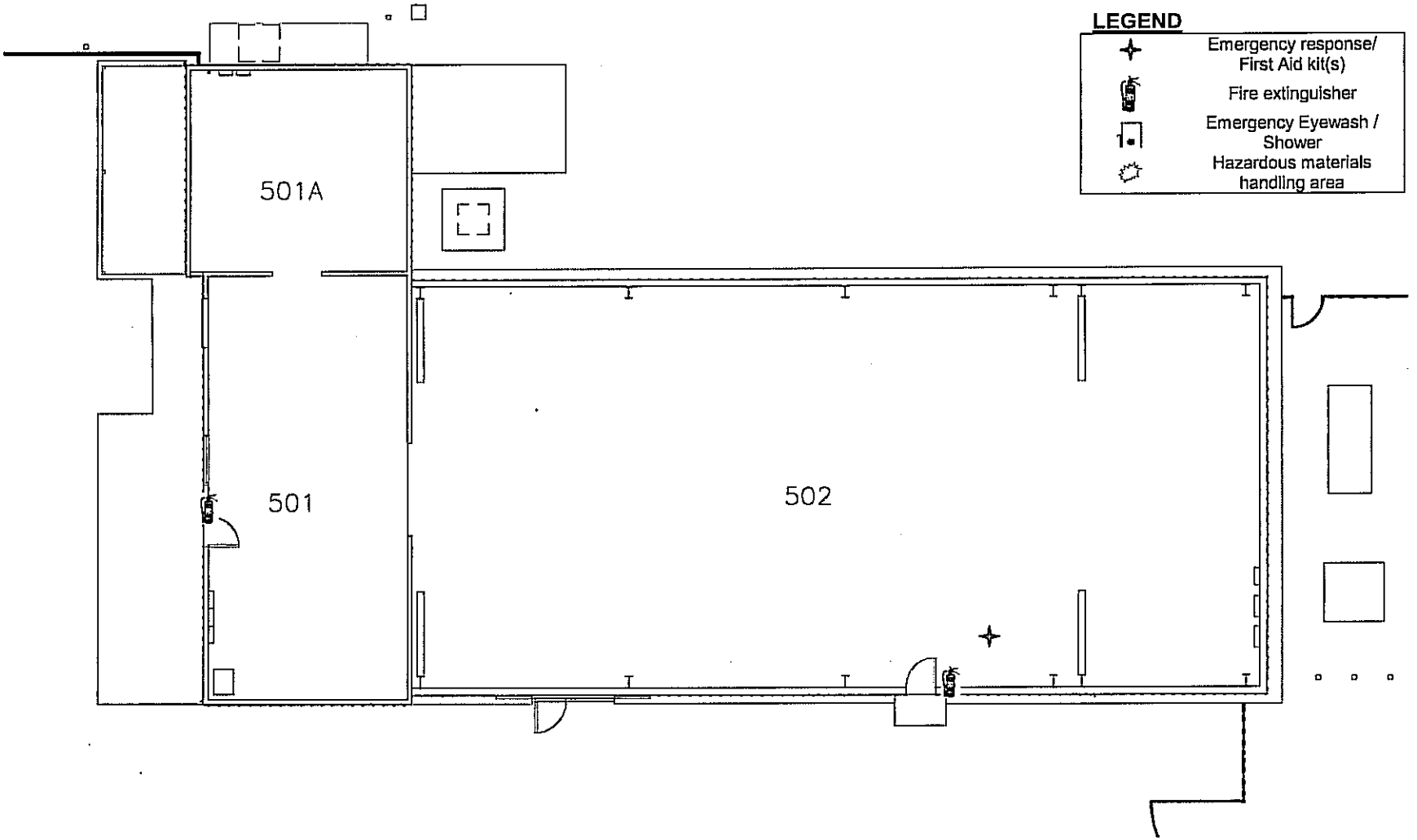
- Emergency response/ First Aid kit(s)
- Fire extinguisher
- Emergency Eyewash / Shower
- Hazardous materials handling area



UNIVERSITY OF CALIFORNIA LAWRENCE BERKELEY NATIONAL LABORATORY **FACILITIES DIVISION**	0 5 10 20	ASBUILT CONDITION KEYPLAN	date: 1-7-2006 update: JSK	**400-1** 1 of 1

LEGEND

- Emergency response/ First Aid kit(s)
- Fire extinguisher
- Emergency Eyewash / Shower
- Hazardous materials handling area



UNIVERSITY OF CALIFORNIA
LAWRENCE BERKELEY NATIONAL LABORATORY
FACILITIES DIVISION

0 5 10

ASBUILT CONDITION
KEYPLAN

date: 3/1/2005
update: NLP

500-1

1 of 1

7/12/07

Genomics Division/JGI ISM Plan

Annual Review and Update of Genomics/JGI ISM Plan

The Genomics Division/JGI ISM Plan was reviewed and revised in July of 2007. The following are the changes in either content and/or ES&H resource commitment:

- Revised entire plan to follow the EHS recommended form
- Removed generic language and used pointers to PUB-3000
- Added description of how Building 84 Genomics Safety Program is covered
- Added detailed responsibility sections with detailed description of manager/supervisor responsibilities
- Revised the plan throughout to reflect actual JGI EHS practices
- Added a description of the JGI Safety Subcommittees
- Added work authorizations table
- Updated Balanced Resources section to include ergonomics support

Eddy Rubin
Genomics Division Director

7.14.07
Date

Stephen M Franaszek
Stephen Franaszek
JGI/Genomics Division Safety Coordinator

7/16/07
Date

Howard Hatayama
EH&S Division Director

8/1/07
Date

Table of Contents

Genomics Division Integrated Safety Management (ISM) Plan

The Division Integrated Safety Management Plan is the guiding document developed to implement an integrated safety program for the Genomics Division/Department. This plan describes the mechanisms that will be applied in the division to ensure that LBNL safety policies and requirements are properly implemented. The Laboratory's ES&H policies and requirements are contained in the:

- Regulations and Procedures Manual (RPM) http://www.lbl.gov/Workplace/RPM
- Health and Safety Manual (LNBL/PUB-3000) http://www.lbl.gov/ehs/pub3000/
- Operations and Assurance Plan (OAP) http://www.lbl.gov/ehs/oap/oap_home.htm
- Work Smart Standards (WSS) set http://labs.ucop.edu/internet/wss/wss.html

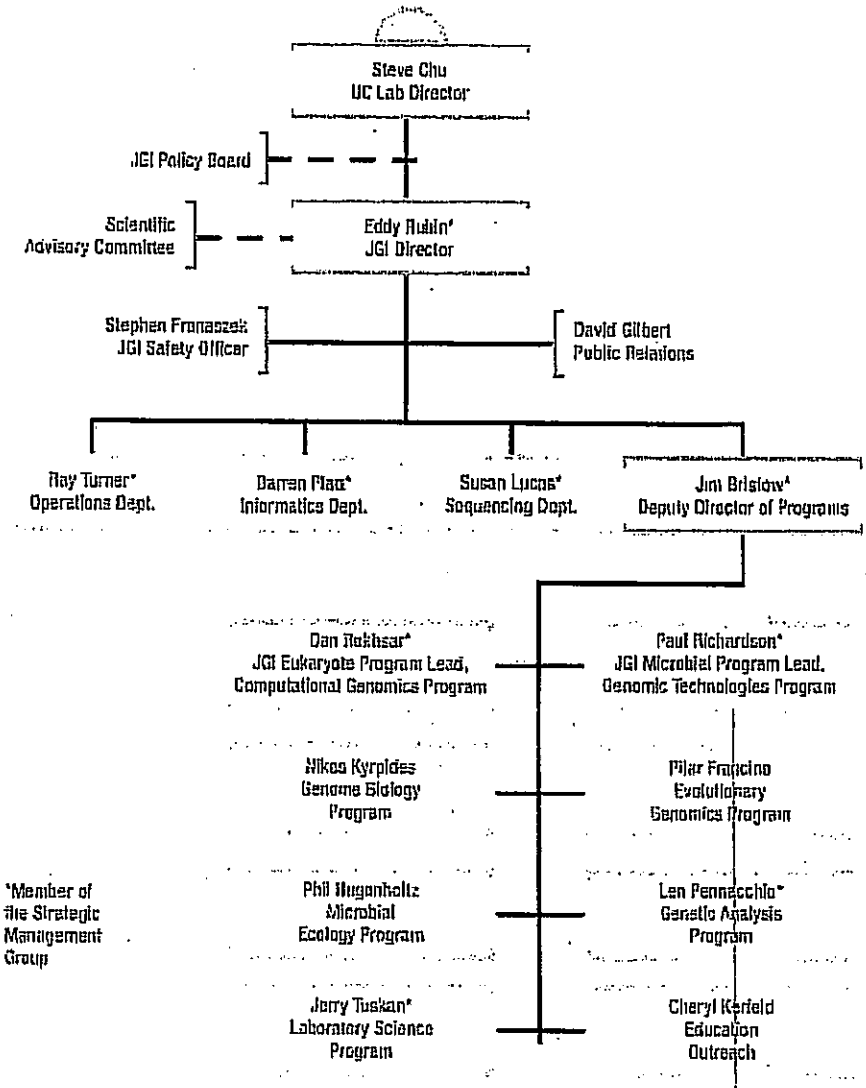
This document explains which mechanisms will be maintained in this division to ensure that they are properly implemented.

Due to the geographic separation of the Joint Genome Institute in Walnut Creek and the Building 84 Genomics program at Berkeley, Safety Coordinator duties for the Genomics Division are split between two Safety Coordinators. A designated Safety Coordinator for the JGI is responsible for the JGI Walnut Creek location and reports in this capacity directly to Genomics Division Director Eddy Rubin. The person assigned to the position of Life Sciences Division Safety Coordinator is responsible for the Genomics Division safety program in Building 84, reporting in that capacity directly to Genomics Division Director Eddy Rubin. . **This ISM plan covers only the Genomics Operations at the Joint Genome Institute at Walnut Creek California.** The safety related activities at the Building 84 LBNL site are covered under a safety program descried in the Life Sciences Division ISM Plan

Mission

The Joint Genome Institute's overarching mission is to provide integrated high-throughput sequencing and computational analysis to enable genomic-scale/systems-based scientific approaches to DOE-relevant challenges in energy and the environment.

Organizational Chart for the JGI



Introduction

This ISM plan outlines how the operations at the JGI/Genomic Division Facility in Walnut Creek follow the Integrated Safety Management (ISM) model. The ISM guiding principles and core functions are listed below;

Seven Guiding Principles of ISM
Line management responsibility for safety (EH&S) – Line management is responsible for the protection of the public, the workers, and the environment. Division line managers are responsible for integrating EH&S into work and for ensuring active communication up and down the management line and with the workforce.
Clear roles and responsibilities – Clear and unambiguous lines of authority and responsibility for ensuring ES&H are established and maintained at all organizational levels within the Division, and for work performed by its contractors.
Competence commensurate with responsibilities – Personnel must possess the experience, knowledge, skills, and abilities to discharge their responsibilities. Division management to ensure that the appropriate depth and breadth of technical talent is available to periodically evaluate competencies. Competence includes training, experience, and fitness for duty.
Balanced priorities – Resources are effectively allocated to address ES&H, programmatic, and operational considerations. Protecting the public, workers, and the environment is a priority whenever activities are planned and performed.
Identification of safety standards and requirements – Before work is performed, the associated hazards are evaluated and an agreed-upon set of standards and requirements are established. These standards, if properly implemented, provide adequate assurance that the public, workers, and environment are protected from adverse consequences.
Hazard controls tailored to work being performed – Administrative and engineering controls to prevent and mitigate hazards are tailored to the work and associated hazards being performed.
Operations authorization – The conditions and requirements that must be satisfied for operations to be initiated and conducted are clearly agreed upon.

Five Core Functions of ISM
Plan for the work – Clear definition of the tasks to be accomplished as part of any given activity
Analyze the hazards – Analysis and determination of the hazards and risks associated with any activity; in particular, risk to employees, the public, and the environment.
Develop and implement hazards controls – Controls sufficient to reduce the risks associated with any activity to acceptable levels.
Perform work within controls – Conduct of the tasks to accomplish the activity in accordance with the established controls.
Provide feedback and continuous improvement – Implementation of a continuous-improvement cycle for the activity, including incorporation of employee suggestions, lessons learned, and employee and community outreach, as appropriate.

General Responsibilities and Accountability for All Employees

Employees, participating guests, contract labor, contractors, and visitors are responsible for ensuring that all activities are carried out in a safe manner, and for knowing and following the ES&H requirements that apply to their work. They are expected to work safely, determine which ES&H requirements apply to their work, and to cooperate with the division ES&H activities. This responsibility and accountability cannot be delegated. LBNL/PUB-811, Integrated Safety Management for Employees, contractors, Participating Guests and Visitors: Handbook of Safety Policy, Requirements and Technical Guidance, is a reference guide that has been prepared and made available by the EH&S Division through the Web at http://www.lbl.gov/ehs/pub811/index.html.

All contracted work under division/department auspices must also be accomplished in a safe manner. Managers responsible for the work must ensure that qualified contractors/contract labor/service vendors are selected, hazards are identified, and work is performed safely within its assigned space. Individuals will need to consult with qualified specialists (e.g., division ES&H coordinators and EH&S Division staff) to resolve any questions about ES&H requirements. If there is any question about the safety or environmental impact of an activity, the work should be stopped and the issue(s) resolved before proceeding. The specific policy and procedure for stopping work is found in LBNL/PUB-3000, Chapter 1, Section 1.5 (Stopping Unsafe Work). http://www.lbl.gov/ehs/pub3000/CH01.html#_Toc407015329

Director's Responsibilities:

The Genomics Division Director is ultimately responsible and accountable for assuring that all operations are conducted in a manner that protects the health and safety of employees, guests, visitors and the environment, and is in compliance with all LBNL EH&S policies and requirements. The Director may request assistance from Deputy Director, JGI Operations Manager, JGI Safety Coordinator and others as needed, but retains overall responsibility and authority for EH&S management and performance within the Division.

Safety Coordinator Responsibilities:

Due to the geographic separation of the Joint Genome Institute in Walnut Creek and the Building 84 Genomics program at Berkeley, Safety Coordinator duties for the Genomics Division are split between two Safety Coordinators. A designated Safety Coordinator for the JGI is responsible for the JGI Walnut Creek location and reports in this capacity directly to Genomics Division Director Eddy Rubin. The person assigned to the position of Life Sciences Division Safety Coordinator is responsible for the Genomics Division safety program in Building 84, reporting in that capacity directly to Genomics Division Director Eddy Rubin.

Safety Coordinator Responsibilities - Cont.

Both the JGI and B84/LSD Safety Coordinators are responsible for administering the ES&H program in their respective areas according the specific responsibilities for Safety Coordinators listed in the PUB-3000 section 1.3.2.9. The exception to this split is that the JGI Safety Coordinator will serve as the primary author of the Genomics Division Annual Self Assessment Report and for gathering the necessary input from the B84 LSD Safety Coordinator.

The Safety Coordinator for the JGI-Walnut Creek site has additional duties due to the geographical distance from the LBNL main site. These are specific to the JGI site and include:

- Developing and presenting the site specific EH&S Safety Orientation Course (PFG-0010)
- Coordination of the Ergonomics Program at the JGI
- Developing and maintaining the JGI site specific Job Hazard Questionnaire
- Coordination of the EH&S training program to minimize travel between sites by offering JGI specific classes when needed, and arranging for LBNL EHS training to be conducted at the JGI Walnut Creek site
- Coordination and support of the JGI Ergonomic program and the Emergency Response Program
- Coordination and support for implementation of the LLNL/LBNL/JGI Safety Program MOU

EHS Division Liaison Responsibilities:

The EHS Division Liaison Bruce King serves as the prime technical point of contact with the Genomics Division, and interfaces primarily but not exclusively with the Safety Coordinator. The Liaison is responsible for ensuring that the appropriate technical support is provided to implement and interpret Berkeley Lab ES&H policies. The specific responsibilities of the Genomics Division EHS Liaison are outlined in the PUB-3000, Section 1.3.2.10

Manager /Supervisor Responsibilities:

Under integrated Safety management - ISM, line management is responsible for safety, thus managers and supervisors have the extensive safety responsibilities that are listed below. These responsibilities apply to all operations and areas under the manager's/supervisor's direct management or supervision.

Manager/ Supervisor General ISM Responsibilities

- Communicating ES&H information to staff, and maintaining or increasing employee awareness of ES&H issues.
- Assuring that hazards have been identified and evaluated, and that the appropriate corrective actions and controls have been implemented.
- Instituting, assigning, and enforcing the use of Personal Protective Equipment.
- Managing the accumulation storage and disposal of hazardous waste
- Conducting periodic documented management EHS walkthroughs and inspections of all areas. Although quarterly inspections are recommended for all laboratories, JGI laboratories are required to be inspected every six months. All other areas are required to be inspected annually.
- Forwarding documentation of all formal inspections, audits and walkthroughs to the Safety Coordinator and entering the findings in the CATS database.
- Participating in incident TAP-Root accident investigations.
- Ensuring that the appropriate EHS documentation and records are accurate and maintained. This includes:
  - Chemical inventory records on the CMS database,
  - Hazardous equipment and operations in the HEAR database
  - Compliance issues, findings and corrective actions from TAP root investigations and formal assessments in the CATS database.

Manager/ Supervisor Work Authorization Responsibilities

- Authorization of all work including preparing, maintaining and renewing all required authorization documentation (AHD, Biological Use Registration).
- Assuring that qualified contract workers, contractors and service vendors are selected, hazards are identified and communicated, work is performed safely, and applicable EHS requirements, which may include having an EHS, approved Safety Program and/or a completed Subcontractor Safety Check List are on file.
- Ensuring that live electrical work, open beam work with lasers, using cranes or forklifts is not authorized or performed without the required training completed prior to the work being performed.

Manager/Supervisor Training Responsibilities

- Assuring that the employee's skill and knowledge is commensurate with the hazards in his or her work environment
- Keeping records of course outlines and attendance for all On the Job Training.
- Ensuring that all employees and guests who work in the Genomics Division for more than 30 days a year complete a Job Hazard Questionnaire (JHQ) within the first two weeks of employment and update their JHQ every 12 months.
- Meeting with each of their employees on an annual basis and reviewing their qualifications and training.
- Ensuring that all students, contractors, and other guests complete required training including official EH&S courses, initial training on new instrumentation or equipment provided by vendors, and training provided by supervisors or other qualified personnel on an ongoing, on-the job basis.

Employee (and Student) Responsibilities:

- Adhere to LBNL EH&S policies and procedures.
- Complete a Job Hazard Questionnaire within two weeks of initial employment
- Completing all required training within the 60 day of hire grace period. If training is not available within the 60 day grace period, employees shall be scheduled to attend the next available required training class.
- Updating their JHQ on an annual basis.
- Follow the existing internal EH&S policies including the policies for the use of Personal Protective Equipment.
- Exercise LBNL's "Right to Stop Unsafe Work" policy, whenever there is an imminent hazard to life, safety or health. These procedures are found in PUB 3000, Chapter 1 – Section 1.5 (Stopping Unsafe Work): http://www.lbl.gov/ehs/pub3000/CH01.html#_Toc407015329

Student Responsibilities:

- The JGI ISM plan does not distinguish between students and employees. Students are afforded the same protections and assume the same obligations with regard to EH&S as employees. Students have the same responsibilities and must complete a JHQ and the assigned EH&S classes.

Safety Committees and Employee Led Safety

The JGI Safety Committee

The JGI Safety Committee is comprised of managers, supervisors, and staff from different areas, representing different functional areas of the production sequencing and research process. Headed by the JGI Safety Coordinator, this committee meets monthly to identify and discuss ES&H-related concerns arising from the different functional groups and to disseminate essential operations-level information to the staff. Topics of discussion may include hazardous chemical handling and disposal, exposure assessments, policy and procedure review, equipment use, training or any of a variety of ES&H challenges facing the group. The committee members provide feedback to their respective groups. Minutes are provided to the members and JGI staff and will be posted on the internal JGI website.

The current Safety Committee members are:

	Stephen Franaszek	Safety Coordinator
	Michael Lee	EHS Technician
	Christine Naca	Ergonomics Working Group Chair
	Steve Wilson	Safety Culture Working Group Chair
	Wendy Schackwitz	Emergency Response Working Group Chair
	Rene Perrier	Emergency Response Working Group
	Erika Lindquist	Emergency Response Working Group
	Susan Lucas	Production Department Head
	Ray Turner	Operations Department Head
	Jacob Golder	Informatics Department Head
	Paul Richardson	Genomic Technologies Program Head
	Phil Hugenholtz	Microbial Ecology Program
	Feng Chen	Sequencing Department
	Dee Catino	Human Resources
	Simon Roberts	Instrumentation
	Greg Stanley	Facility Manger
	Tijana Glavina del Rio	Production Department
	Malak Shoukry	Building 84 Representative

In 2006, the JGI Safety Committee formed three subcommittees tasked with improving EH&S at the JGI. The chair of each of these committees belongs to the Safety Committee. Members of the subcommittees do not need to belong to the Safety Committee. These subcommittees remain active and their functions are listed below

Ergonomic Working Group

The Ergonomic Working Group's primary function is to run the JGI Ergonomic Program through the representation, involvement and cooperation of all JGI employees. Specific responsibilities of this group include:

- Develop and prioritize ergonomic interventions and improvements
- Develop and disseminate ergonomics related information and training

Safety Culture Group

The Culture Group's primary function is to provide feedback on the status of safety culture and to continually improve the state of safety culture at the JGI through the representation, involvement and cooperation of all JGI employees. Specific responsibilities of this group include:

- Promote safety culture using participatory methods such as promotions, safety fairs, and contests.
- Conduct routine surveys to provide feedback for the management and the safety coordinator.
- Develop informational safety related "potty training" posters.

Emergency Response Team

The Emergency Response Team's (ERT) primary function is to respond in the event of a significant disaster or emergency where regular emergency response agencies are unavailable. Specific responsibilities of this team include:

- Maintain an emergency response team that is trained to FEMA – Community Emergency Response Team (CERT) principles.
- Conduct yearly evacuation drills in conjunction with LBNL site-wide emergency drills.
- In the case of a localized emergency where professional Emergency Responders are available, assist the Emergency Responders and coordinate the evacuation JGI facilities if necessary.
- In the case of a widespread emergency or disaster where professional emergency responders are delayed, assist employees using the FEMA – CERT methods.

Scope of Work Authorized

The original scope of work authorized for this division was established during the 1996 Integrated Hazard Assessment. The inventory of hazards is now incorporated in the Hazard, Equipment, Authorization, and Review (HEAR) database. The scope statement is an important part of the authorization agreement and describes the range of permitted work. Annually, the Safety Coordinator will coordinate a review of this database to ensure that it is updated.

Work Requiring Specific Approval

Each principal investigator will prepare ES&H documentation and obtain required approvals for potentially hazardous or regulated work as specified in Chapter 6 of LBNL/PUB-3000 prior to commencement of the work. The following work presently carried out in this division requires such documentation:

Authorization	Type	Location	PI or Supervisor
Biological Use Registrations	All Biological work that does not require a BUA is registered with the Institutional Bio-safety Committee	Buildings 100 and 400	
Autoclave Standard Operating Procedures (SOP)	SOP assures compliance with NIH Guidelines	Rooms 142, 143, 418	Nichols, Nora
Certified Unified Program Agency (CUPA) Annual Business Authorization Permit Hazardous Materials Business/Mgt. Plan Business Authorization Permit Hazardous Waste Generator (CCR Title 22, section 66262 requirements)	Hazardous Materials Business Plan, Hazardous Waste Generation, Waste from SAAs and WAAs ,	Buildings 100, 400	Franaszek, Stephen
Spill Prevention Control and Countermeasure Plan (SPCC), May 2003, revision 1.0	4,000 above-ground gallon diesel tank for building emergency generator in outdoor fenced area	Between Buildings1 00 and 500.	Franaszek, Stephen
Central Contra Costa County Class III Industrial User Permit and Slug Discharge Prevention & Contingency Plan	Discharges to the sanitary sewer.	100, 400	Franaszek, Stephen
Bay Area Air Quality Management District (BAAQMD) Permit to Operate, Plant #14549,	Operation and maintenance of two JGI emergency diesel generators	Fenced area betw 100 and 500	Franaszek, Stephen
Activity Hazard Document (AHD) 2032, DNA Sequencing Units	JGI rooms with Class 1 laser products, in gene sequencers,	100 400	Daum, Christopher
Energized Electrical Work Permits Filled in Greg Stanley's office	Reviewed all A1 and A2 Energized Electrical Work Permits	100, 400	Stanley, Greg
Active Lock/Tag Log	Reviewed written safety plans procedures for Lockout/Tagout and logs for subcontractors.	100, 400	Stanley, Greg
Surface Penetration Permits	Reviewed all Surface Penetration Permits	100, 400	Stanley, Greg
Fire Safety Permits	Reviewed permits	100, 400	Stanley, Greg

Off-Site Work

The safety of division personnel assigned to work off site at non-DOE facilities (e.g., abroad, in private industry, at educational institutions or remote field locations, etc.) will be addressed, as appropriate through the host's ES&H protection programs by the responsible line-management chain of the host organization. It is the responsibility of the employee's Laboratory line manager/supervisor to review the scope of work, associated hazards, and necessary controls with the Laboratory employee prior to offsite work. Work involving use of ionizing radiation, non-ionizing radiation, chemicals, biological agents, or exposure to physical hazards [pressure, electrical, mechanical, environmental (noise/heat/cold/vibration), industrial equipment, ergonomics, etc.] will require ISM review.

Telecommuting

Per LBNL policy [RPM 2.23(D)(5)], telecommuting is a viable work option under certain conditions. An "Agreement & Authorization for Telecommuting" must be established between an employee and his/her supervisor. Once a telecommuting agreement is officially approved, the employee's offsite workspace must be maintained by the employee in a safe condition free from hazards. If computer equipment (PC, Mac, Laptop) will be used as part of the telecommuting function, the following activities will be required to be completed and documented:

- Completion of ergonomic awareness training or attending a live classroom (EHS060).
- Completion of an ergonomic self-assessment of the immediate telecommuting work area using the Laboratory Ergonomics Evaluation Form.
- Installation of the necessary ergonomic accessories identified in the self-assessment to assure the telecommuting work area provides controls against ergonomic risks.

Qualification and Training

The Genomics Division uses the Job Hazard Questionnaire (JHQ) to identify hazards and required training at the employee level. Genomics employees who work in the LNBL Building 84 location will use the LBNL site-wide JHQ. Employees who work at the JGI Walnut Creek Location will use the JGI JHQ that is customized for the Walnut Creek location.

Feedback and Improvement Mechanisms

The Genomics Division uses the following mechanisms to ensure the ISM function of feedback and improvement:

Periodic Work Area Walkthroughs

Division line managers will conduct periodic safety walkthrough/inspections of work areas to assess compliance status and promote safety awareness. Documented Laboratory inspections are recommended every quarter and required every six months. Documented inspections of all other areas are required annually. Documentation of safety walkthrough/inspection results should be forwarded to the Safety Coordinator for inclusion in the yearly Division Self-Assessment. Non-compliance findings from a safety walkthrough/inspections must be recorded and tracked via the LBNL-wide Corrective Action Tracking System (CATS) database.

Safety Coordinator/EHS Technician Informal Walkthroughs

During the execution of their normal job duties both the Safety Coordinator and EHS technician routinely walk through work areas and are responsible for assessing safety compliance and spotting safety deficiencies. The EHS Technician performs week walkthroughs of all laboratory areas as part of the Best Management Practices inspections required by the Slug discharge Plan. Compliance issues and findings from walkthroughs will be entered and tracked in the CATS system.

CATS

The Corrective Action Tracking System (CATS) database will be used by the Management, Supervisors, and the Safety Coordinator as the official record for regulatory compliance issues, findings from formal assessments and inspections, and corrective actions from Tap Root investigations or accident reviews.

Safety Track

Safety Track is a database used only at the JGI in Walnut Creek to address minor EHS issues and non-regulatory compliance concerns. Anyone can enter concerns or issues into this database. The Safety Coordinator along with the EH&S Technician are responsible for addressing all safety track items.

Accident and Incident Investigations

Whenever there is a recordable injury, the Genomics Division along with EH&S Division conducts a TAP Root incident review. The incident review team includes an EH&S Division Tap Root trained investigator, the Safety Coordinator, EH&S Liaison, injured employee, and responsible supervisor. The review team discusses the event and considers the causes of the injury and future measures that will enable safe job performance. All corrective actions will be entered into the CATS system where the implementation will be tracked. When appropriate, lessons learned and other feedback mechanisms are communicated to Division committees and staff. The results are reported to the Genomics Division Director, who holds line management accountable for accident investigation and resolution.

Accident and Incident Investigations – Cont.

Injuries that involve employees who have LLNL as the home laboratory are reviewed in an equivalent manner although the review protocol may be different than TAP Root. In these instances, LLNL will provide technical expertise for the review team and the investigation. Details can be found in the LLNL/LBNL/JGI Safety MOU agreement (see Attachment 1).

Balanced Resources - Funding and Resources

The Genomics Division Director, Deputy Director and Principal Investigators incorporate ES&H concerns in their resource allocations for all projects and proposals. This includes, but is not limited to, funding for safety equipment, permits, training, maintenance, waste disposal and facilities modifications unless covered by institutional funding sources. The LBNL EH&S Division provides additional support services.

The following distribution of resources is allocated to EH&S efforts to ensure proper implementation of the Genomics Division ISM Plan. These resources may be adjusted as needed with concurrence of LBNL EH&S.

JGI Support	**LBNL Support**
0.2 FTE – JGI Head Operations Manager	0.1 FTE – JGI EH&S Division Liaison
1.0 FTE – JGI Division Safety Coordinator	0.2 FTE – EH&S Industrial Hygiene
1.0 FTE – JGI Division EHS Technician	0.2 FTE – EH&S Waste Management
0.1 FTE – JGI Facilities Manager	0.3 FTE – EHS Ergonomic Specialist
0.05 FTE – JGI Safety Committee Members	
Building 84 Support	**UCSF Support**
0.13 Life Sciences EH&S Coordinator	0.3 FTE – Ergonomic Specialist – JGI Early Intervention Program

Signatures:

Submitted By:

Eddy Rubin
Genomics Division Director

Date

EH&S Resource Commitment:

Howard Hatayama
EH&S Division Director

Date

Accepted:

Steve Chu
LBNL Director

Date